



I. RELEVANCE

When asked how my career has been influenced by my medical school education at USUHS, I can summarize the discussion to a simple phrase: I became a military physician, not merely a physician in the military. USUHS was the catalyst from which my entire career has evolved. Today, more than ever, this catalyst is necessary if we are to train and retain military physicians who place enormous value on the unique art and science of a military medical profession. We must have a cadre of military medical officers who practice the art and science of military medicine with an understanding of the past, where we have come from, applying new capabilities and skills within the context of military operations and be able to envision and work toward a more capable, flexible and agile military medical system in the future.

- Brigadier General C. William Fox, Jr., MC, USA, USU SOM Class of 1981, Commanding General, Brooke Army Medical Center and Great Plains Regional Medical Command, Fort Sam Houston, Texas, Correspondence with USU, April 13, 2005.

I write to express the Association's strong support for the unique role and mission of the Uniformed Services University of the Health Sciences... this institution's alumni provide the backbone of the senior leadership of the three service's medical departments.

Faculty at USUHS are widely recognized among those of peer institutions for the excellence of the medical education program and are frequent invited speakers at our annual meetings on this important topic. Moreover, USUHS with its Center for Patient Safety can and will serve as a laboratory for this critical need for our entire profession. Other programs at USUHS in nuclear and biological warfare defense and operational medicine simply do not exist at any of the nation's civilian medical schools.

At no other institution are medical students taught about the medical response to weapons of mass destruction. Only a handful of other medical schools offer courses in tropical medicine... USUHS graduates have demonstrated a commitment to serving their country in numbers and to a degree that is unrealistic to expect from civilian physicians. At a time when this nation's military operations are diverse and changing, we need a corps of dedicated individuals who are trained and willing to respond to these challenges.

- **Jordan J. Cohen, M.D., President, Association of American Medical Colleges, Letter to the Deputy Secretary of Defense, April 27, 2005.**

I write to express in the strongest terms my support for the continued development and sustenance of the Uniformed Services University of the Health Sciences. This excellent health sciences university is now well established among the most highly respected of American health professional schools. I speak not only for myself but for the Association of Academic Health Centers and for the leaders of our member academic health science centers. USUHS and its leaders have worked with others in the Association of Academic Health Centers to advance the development of organized distance learning techniques in health professional education, in bioterrorism defense, in the strategizing about global health and domestically about the systemic delivery of population-based health care and preventive services, in all of which areas USUHS is in a leadership position... the military experiences in Afghanistan and Iraq have amply demonstrated why the military needs the specially trained personnel supplied by USUHS to go into the field to deliver the most extraordinary care possible there, while also providing the specialty back-up in our major military hospitals to follow up once the wounded are transported for definitive care... We know of the extraordinary high percent of graduates of the medical school who stay the course to retirement in the military and to my mind these data make the economic argument for supporting USUHS very strong indeed.

- **Roger J. Bulger, M.D., President and CEO, Association of Academic Health Centers, Letter to the Deputy Secretary of Defense, April 28, 2005.**

On behalf of the American Medical Association (AMA), I write to express our strong support for the Uniformed Services University of the Health Sciences (USUHS)... The AMA vigorously supports the continuance of USUHS because we believe it is vital to the continued strength, morale, and operational readiness of the military services... Training men and women to assume careers as medical officers in the military and the United States Public Health Service is an important mission that must continue. Many USUHS graduates are uniquely qualified to meet the health needs of our armed forces in foreign theaters and combat situations, both of which may present injuries and illnesses that domestic civilian physicians do not often encounter. USUHS graduates are trained in the medical response to chemical, biological, radiological, nuclear, and explosive/weapons of mass destruction (CBRNE/WMD) related incidents, filling a need we wish did not exist but must address responsibly... Moreover, those in the Public Health Service, including USUHS graduates, play an important role in our nation's health. Of note, *U.S. News and World Report* has ranked USUHS Graduate Programs

in Public Health, which focus on community health, sixth in the nation for the last two years... The AMA strongly supports the Uniformed Services University of the Health Sciences. Its mission and goals are important to national interests and should continue.

- **Michael D. Maves, M.D., MBA, Executive Vice President, CEO, the American Medical Association, Letter to the Deputy Secretary of Defense, May 6, 2005.**

The Middle States Association/Commission on Higher Education visiting team applauds the dedication of all associated with the Uniformed Services University of the Health Sciences. From the students, staff, administrators, president through the Board of Regents, the Nursing Chiefs and others we met during the visit, each exhibited a sincere commitment to the mission of the University. Theirs is a unique mission. The Team realized the impact of the fulfillment of the mission while touring Bethesda Naval Hospital where military injured in the war with Iraq were obtaining treatment. The Team leaves confident knowing that by USU fulfilling its mission, the U.S. military will receive the best of health care while in harms's way and during peacetime... We leave the University with a sincere belief that the health care of the military services, and the burgeoning research in areas critical to the world in which we live, are in the excellent care of USU practitioners and faculty. We believe that they serve this country well... We truly leave with a sense of pride and gratitude for providing this service to the University.

- **Evaluation Team Representing the Middle States Association, *Summary and Conclusion, Report to the Faculty, Administration, Trustees, Students of USUHS, USU Received the Maximum Accreditation of Ten Years with Commendation (2003-2013), April 2, 2003, pages 22-23.***



OPERATION BUSHMASTER

I. THE UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES (USU)

Learning to Care for Those in Harm's Way

A recognized vital and integrated component of the Military Health System (MHS), USU continues to provide essential support to *Force Health Protection* through its unique training centered in preventive medicine and combat-related health care. In accordance with strategic guidance, the University continues to successfully focus on: **RELEVANCE** - the critical, or core relevance, of its essential mission to provide continuity, leadership, and responsiveness to the special needs of the MHS; **READINESS** - the provision of uniformed physicians, advanced practice nurses, and graduate degree recipients who are uniquely qualified to practice and address combat casualty care, tropical medicine, combat stress, disaster medicine, and the medical response to unconventional, disaster, or operational contingencies; and, **OPTIMIZATION** - the cost-effective management of its resources to ensure the generation of annual cost avoidance for the MHS through its multiple, fully accredited programs (estimated cost avoidance during 2004 was \$33.6 million).

ESTABLISHMENT, DEVELOPMENT, AND GOVERNANCE

The Uniformed Services Health Professions Revitalization Act of 1972 Establishes the University. Public Law 92-426, *the Uniformed Services Health Professions Revitalization Act of 1972*, established the University as a separate agency within the Department of Defense (DoD). Planning for the development of USU began, in 1974, when the **President of the United States, Richard M. Nixon**, appointed a Board of Regents and the University's first President, **Anthony R. Curreri, M.D.** Initial efforts were focused on establishing the USU School of Medicine (SOM) as the University's first academic program. (A copy of Public Law 92-426 is at Appendix A.)

When establishing the Uniformed Services University of the Health Sciences (USUHS) in 1972, Congress and DOD envisioned it as a critical accession source for highly qualified, career physicians essential for the success of the all-volunteer military. Subsequent achievements of USUHS graduates, their high rates of retention, and their rise in disproportionate numbers in leadership positions attest to USUHS's success.

When USUHS was formed, there was no unifying intellectual concept of "military medicine" or how the DoD might operationalize tri-Service medical support. There were groups of uniformed physicians separately devoted to Ground Combat, Aerospace, and Undersea Medicine. USUHS changed that by developing integrated, academically rigorous curricula for military medicine. One component, the Combat Casualty Care Course (C4) has been presented to over 50,000 Military Health System and other professionals... New (USUHS) centers of excellence are poised for dramatic contributions to force health protection and deployment health. Goals are: delivering new science and capabilities for combating world-wide emerging infectious diseases, advanced combat casualty care, WMD first-response

training, protection against radiation injuries, and on-line, interactive training for Active, Reserve, and Guard components and the nation's core of civilian first responders.

- **The Honorable William Winkenwerder, Jr., M.D., Assistant Secretary of Defense, Health Affairs, Briefing on USUHS before the Leadership of the Office of the Secretary of Defense, April 18, 2005, pages 1 and 3.**

Collaborative Efforts by the Joint Services and Civilian Medical Communities in the Development of the University. The initial development of objectives for the USU SOM was accomplished through the combined efforts of the USU Board of Regents; the Board of Regents' Educational Affairs Committee; **USU President, Anthony R. Curreri, M.D.**; the first **Dean of the USU SOM, Jay P. Sanford, M.D.**; and, special working groups. Activities used to develop these objectives included committee meetings, retreats, and consultation with a variety of experts from military medicine and civilian medical organizations and institutions. Individuals and groups consulted included: **the Surgeons General** of the Army, Navy, and Air Force; **Chiefs of the Medical Departments/Services** of the Army, Navy, and Air Force; **physicians from** the Walter Reed Army Medical Center, the National Naval Medical Center at Bethesda, the Malcolm Grow United States Air Force Medical Center at Andrews Air Force Base, the Wilford Hall United States Air Force Medical Center, the United States Army Academy of Health Sciences, the Sheppard Air Force Base Academy of Health Sciences, the Brooke Army Medical Center, and the Armed Forces Institute of Pathology; **the Service Secretaries** from both the Air Force and the Navy; the Association of American Medical Colleges (**AAMC**); the American Medical Association (**AMA**); the Liaison Committee on Medical Education (**LCME**); the Department of Health, Education, and Welfare (**HEW**); the National Institutes of Health (**NIH**); and, the following **Universities**: George Washington University; Georgetown University; and, Howard University. The fine tradition of the University's identifying and responding to the special needs of the Uniformed Services has been an on-going process since 1974.

DoD Directive 5105.45. Significant changes in the USU governance structure resulted from actions taken, during 1991. On April 15, 1991, the Secretary of Defense revised the DoD Directive for Health Affairs, 5136.1, to delegate responsibility for the University from his office to the Assistant Secretary of Defense for Health Affairs (ASD/HA). The authority to appoint the President of the University was retained by the Secretary of Defense. On April 19, 1991, the DoD Directive for USU, 5105.45, was updated to reflect those changes and to define in detail the mission, organization, responsibilities, functions, relationships, authorities, and governance of the University. In a memorandum dated May 3, 1991, the ASD/HA re-delegated the authority for the day-to-day management of the University to the USU President; the current delegation of authority to the USU President for the on-going management of the University is also included in DoD Directive 5105.45. (A copy of the most current revision of DoD Directive 5105.45, dated March 9, 2000, is at Appendix A.)

Board of Regents' Charter. Prior to 1991, the USU Board of Regents (BOR) had been an independent policy-making body; it is now an advisory committee to the Secretary of Defense. A Charter for the BOR was approved by the Office of the Secretary of Defense (OSD) on April 1, 1991; the most current edition of the BOR Charter is dated April 4, 2003. The Charter defines the objectives and scope of the BOR to: 1) provide advice and guidance to the Secretary of Defense through the ASD/HA for the operation of USU; and, 2) assure that the University operates in the best tradition of academia and is in compliance with the appropriate authorities on accreditation. The USU administration and faculty provided substantial input into the revision of both the USU DoD Directive and the BOR Charter. As a result, the administrative/governance documents, of 1991, reflect the coordinated efforts of the ASD/HA, the BOR, the USU administration and activity heads, SOM department chairs, the SOM Faculty Senate, and the Dean's Executive Advisory Committee. In addition, during this process, the Acting Dean of the SOM coordinated with, and briefed, the LCME and the Commission on Higher Education of the Middle States Association of Colleges and Schools to ensure compliance with the University's accrediting entities on issues regarding governance and administration. To codify the Board's activities, BOR Bylaws were written, during 2000, under the leadership of **Lonnie R. Bristow, M.D., Chair, USU Board of Regents**. On February 6, 2001, the BOR Bylaws were approved. (Copies of the most current BOR Charter and Bylaws are at Appendix A.)

USU and the 1998 Defense Reform Initiative. In November of 1997, the **Honorable William Cohen, Secretary of Defense**, substantiated his support of the University by including USU as part of his Fiscal Year 1998 Defense Reform Initiative (DRI). Program Budget Decision (PBD) 711 issued on December 17, 1997, outlined the DRI and moved USU from under the direct oversight of the Office of Health Affairs, Office of the Secretary of Defense (OSD), to the collective oversight of the Surgeons General of the Army, Navy and Air Force. The PBD ensured manpower and funding for USU and established the Surgeon General of the Navy as the Executive Agent for program, budget, and funding execution responsibilities. *The PBD also directed that the University's funding would continue to be programmed, budgeted, and executed within the Defense Health Program.*

The Establishment of the USU Executive Committee. The administrative process for fiscal matters was defined, during 1998, by the ASD/HA, in consultation with the USU BOR, the USU administration, and the Surgeons General. As a result, DoD Directive 5105.45 was updated, on May 17, 1999, to include the formal establishment of the USU Executive Committee to provide management oversight for the University; the Executive Committee is composed of the three military Surgeons General. *The current membership of the USU Executive Committee includes: Lieutenant General Kevin C. Kiley, Surgeon General of the Army; Vice Admiral Donald C. Arthur, Surgeon General of the Navy; and, Lieutenant General George P. Taylor, Jr., Surgeon General of the Air Force.* As outlined in DoD Directive 5105.45, the USU President reports through the Executive Committee to the ASD/HA. The Executive Committee is presently chaired by **Lieutenant General George P. Taylor, Jr.** (a copy of the current Charter for the USU Executive Committee, dated December 18, 2000, is at Appendix A).

Responsibilities of the Navy as the Executive Agent for USU. As the Executive Agent, the Navy Surgeon General's Office provides oversight for the University's budgeting and programming activities. The DoD Directive 5105.45 further clarifies that the USU funding and personnel requirements will not be offset against the Navy Surgeon General's budget or work-year allocations; thus, USU funding remains within the Defense Health Program.

As the Executive Agent for the Uniformed Services University of the Health Sciences (USUHS) and a member of the Board of Regents, I am pleased to announce that the University recently received a ten-year accreditation with commendation from the Middle States Commission on Higher Education. This is a noteworthy accomplishment and it reflects well on the successful, on-going commitment of the University to provide the highest levels of professional health care education for our Nation's Military Health System (MHS).

The quality of the USUHS alumni ensures that the intent of the establishing legislation, The Uniformed Services Health Professions Revitalization Act of 1972, is being realized. The military unique curricula and programs of USUHS, successfully grounded in a multi-Service environment, draw upon lessons learned during past and present day combat and casualty care. USUHS alumni, 3421 physicians, 200 advanced-practice nurses and 798 scientists, have become an invaluable and cost-effective source of career-oriented, dedicated uniformed officers. Our University graduates volunteer in large numbers for deployment or humanitarian missions; they serve proficiently in desert tents, aboard The Hospital Ship COMFORT, and during air evacuations. USUHS graduates embody the University's mission-driven goal of *Learning to Care for Those in Harm's Way*; they are equal to their sacred mission of providing care to our Nation's most precious resource - the men and women who serve in the Armed Forces... the University has become the Academic Center for the Military Health System... (and) has achieved peer recognition, on-going accreditation with commendation from 14 accrediting entities, and the Joint Meritorious Unit award from the Secretary of Defense.

- **Vice Admiral Michael L. Cowan, Surgeon General of the Navy, Testimony before the Senate Appropriations Committee, Subcommittee on Defense Health, April 28, 2004.**

USU Employees Become Navy Employees. Section 7.2.1 of Directive 5105.45 also directs that USU civilian personnel authorizations will be under the purview of the DoD Executive Agent (Navy) and that USU civilian employees should be moved from OSD and carried on the rolls of the Department of the Navy. The USU civilian employees officially converted from OSD to Navy employees with the changing of the University's Subelement and Unit Identification Code at the end of Fiscal Year 1999. All official reporting documents reflect this change.

An inclusive review of the USU personnel instructions to assure compliance with the Navy personnel instructions was completed by the USU Civilian Human Resources Directorate, during 2000; and, a Navy-conducted review and evaluation of the USU Civilian Human Resources Directorate was conducted on January 14-15, 2002. The Navy review team found that *the USU Civilian Human Resources Directorate was in compliance with the self-assessment requirements of SECNAV Instruction 12273.1, dated March 16, 1999, with no corrective actions required.*

Following the implementation of the Modern Defense Civilian Personnel Data System (MDCPDS), during August of 2001, both the USU government service/wage grade (GS/WG) and the USU administratively determined (AD) employees had to be manually reported as Navy civilian employees pending the revision of computer software, which occurred, during 2002. It was agreed that the Human Resource Services Center (HRSC) of Washington Headquarters Services (WHS) would continue to service the University for its personnel requirements, through 2002. By March of 2003, upon the completion of all software and coordination requirements, all USU personnel services had been placed under the purview of the Navy; and, by mid-2003, the USU payroll services had also been placed under the Navy payroll office. Currently, the University receives personnel services from the Navy's Northwest Region HRSC, located in Silverdale, Washington.

A Strengthened Relationship Between USU and OSD.

Today, the value of USUHS to DOD and to the Nation far exceeds its original mandate to “graduate career military medical officers in an all-volunteer environment.” It is a nationally-respected academic institution operating as part of the DOD culture, and is central to discovering and solving a broad range of public health and medical issues directly affecting medical and force readiness...

Conclusion: USUHS mission, location, assets and faculty are vital to the Military Health System's mission. It directly affects our ability to train and retain a core cadre of career military health and operational medical leaders.

- **The Honorable William Winkenwerder, Jr., M.D., Assistant Secretary of Defense, Health Affairs, Briefing on USUHS before the Leadership of the Office of the Secretary of Defense, April 18, 2005, pages 1 and 3.**

The evolving relationship between the USU and OSD, from 1991 through 2004, has proven beneficial to the University and the MHS and has clarified and strengthened the position of the University, within the entire DoD structure. One example of the successful relationship between USU and OSD was evidenced by the presentation of the *Joint Meritorious Unit Award* by the **Honorable William S. Cohen, Secretary of Defense**, to the University, on December 11, 2000. In addition, on March 22, 2001, the **Honorable Donald Rumsfeld, the current Secretary of Defense**, also confirmed his on-going support for the critical mission of the University, when he wrote to the Chairman of the USU Board of Regents and stated that: *The Department takes great pride in the fact that the USUHS graduates have become the backbone for our Military Health System. The training they receive in combat and peacetime medicine is essential to providing superior force health protection... All of us in the Office of the Secretary of Defense place great emphasis on the retention of quality physicians in the military. The USUHS ensures those goals are met.* On August 2, 2004, the Secretary of Defense awarded the prestigious *DoD Medal for Distinguished Civilian Service* to the USUHS President, **James A. Zimble, M.D.**, upon his retirement; in the citation, Secretary Rumsfeld stated: *The Department can now boast of USUHS as the Academic Health Center for the Military Health System; an asset that continues to garner global recognition for*

its military unique medical readiness training and its positive contributions to the security of our Nation in the critical areas of National Medical Preparedness and Public Health.

USU BOARD OF REGENTS.

Modern military operations require physicians and surgeons to be deployed forward on the battlefield in order to return combat soldiers to duty as quickly as possible and minimize the loss of life and limb among the seriously wounded. This new kind of battlefield requires a new type of medical officer - a professional military medical officer who is trained to be an integral part of the forward combat team as it maneuvers over large distances to engage the enemy. USUHS is the only institution in the Nation that produces professional military medical officers who are specifically trained to care for our men and women in uniform during combat operations.

- **The Honorable Lawrence C. Mohr, M.D., F.A.C.P., F.C.C.P., Member of the USU Board of Regents, Former White House Physician to the President, Letter to USU, April 12, 2005.**

Membership of the Board of Regents. The USU Board of Regents (BOR) is an advisory committee governed by the Federal Advisory Committee Act (Public Law 92-463, Section 1), the General Services Administration Final Rule (41 C.F.R. Part 101-6), and Department of Defense Directive 5105.45. The nine members of the Board are distinguished academics, educators, health care providers and public servants; they are Presidential appointees confirmed by the United States Senate. As of April 2005, the USU BOR includes the following individuals: **Everett Alvarez, Jr., J.D., Chair; Linda J. Stierle, MSN, RN, CNA, Vice Chair; Otis W. Brawley, M.D.; L.D. Britt, M.D.; William C. De La Peña, M.D.; Sharon A. Falkenheimer, M.D.; Ikram U. Khan, M.D.; Vinicio E. Madrigal, M.D.; and, Lawrence C. Mohr, Jr., M.D.**

Ex Officio Members of the Board. In addition to the nine White House appointed members, the Board also has six *ex officio* members. These include: 1) **William Winkenwerder, Jr., M.D., M.B.A.**, Assistant Secretary of Defense for Health Affairs; 2) **Vice Admiral Richard H. Carmona, M.D.**, United States Public Health Service, The Surgeon General of the United States; 3) **Lieutenant General Kevin C. Kiley**, Surgeon General, United States Army; 4) **Vice Admiral Donald C. Arthur**, Surgeon General, United States Navy; 5) **Lieutenant General George P. Taylor, Jr.**, Surgeon General, United States Air Force; and, 6) **Larry W. Laughlin, M.D., Ph.D., Interim President, USU** (*serving as Interim President from August 2004 through June 2005*); the USU President serves as a non-voting member.

Advisors to the Board. **General Thomas R. Morgan, USMC (Retired)**, the former Assistant Commandant of the Marine Corps, serves as the Military Advisor to the Board. There are eight additional advisors to the Board: 1) the Dean, School of Medicine; 2) the Dean, Graduate School of Nursing; 3) the Commander, Wilford Hall Medical Center; 4) the Commanding General, North Atlantic Regional Medical Command and Walter Reed Army Medical Center; 5) the Commander, National Naval Medical Center; 6) the Commander, Malcolm Grow Air Force Medical Center; 7) the Commander, Walter Reed Army Health Care System; and, 8) the Commander, Defense Medical Readiness Training Institute, in San Antonio, Texas.

The Board's Significant Role in Academic Affairs. The BOR has continuously played a prominent role in academic affairs at the University. Faculty appointments, promotions and organization, awarding of degrees, curriculum design and implementation, academic requirements for admission and graduation, and related matters vital to the academic well-being of the University are all included in the definition of *academic affairs* as provided by DoD Directive 5105.45. The Directive clarifies it is DoD policy that **...consistent with the performance of the DoD mission and with established practices covering academic independence and integrity in the fields of medical and health sciences education, the Department of Defense recognizes the unique role of the USUHS Board of Regents in advising the Secretary of Defense. The Assistant Secretary of Defense for Health Affairs, the USUHS Executive Committee, and the President of the USUHS will be guided by the advice of the USUHS Board of Regents on academic affairs.**

The Board of Regents, at the direction of the Assistant Secretary of Defense for Health Affairs, is responsible for identifying and recommending a slate of candidates for the position of President, USU, to the Secretary of Defense.

University Presidents:

Anthony R. Curreri, M.D., was appointed by **President Nixon**, in 1974, and retired in 1976;

The Honorable David Packard, Acting President, served from November of 1976 through May 29, 1981;

Jay P. Sanford, M.D., served, as President, from May 30, 1981, through November 17, 1990;

James A. Zimble, M.D., served from July 15, 1991, to August 2, 2004;

Larry W. Laughlin, M.D., Ph.D., Interim President, served from August 3, 2004 through June 30, 2005; and,

Charles L. Rice, M.D., has served as President since July 1, 2005, to the present.

The BOR also reviews the final selections for the Deans of the School of Medicine and the Graduate School of Nursing prior to their Selection by the USU President.

School of Medicine Deans:

Jay P. Sanford, M.D., was appointed as the first Dean, in May of 1975, and served through November 17, 1990;

Harry C. Holloway, M.D., served as the **Deputy Dean** from July 9, 1990 through June of 1992;

Nancy E. Gary, M.D., was appointed as Dean on June 28, 1992, and served through June of 1995;

Val G. Hemming, M.D., served as Interim Dean from July 2, 1995 through May 2, 1996; following a national search, he then served as Dean from May 3, 1996 through May 19, 2002; and,

Larry W. Laughlin, M.D., Ph.D., was appointed as Dean on May 20, 2002, and continues to serve in that position.

Graduate School of Nursing Deans:

Faye G. Abdellah, Ed.D., Sc.D., RN, served as Acting Dean throughout the establishment of the GSN, which began in 1993; following a national search, she was selected as Founding Dean and served from May 17, 1996 through May 31, 2002; and,

Patricia A. Hinton Walker, Ph.D., RN, FAAN, was appointed as Dean on June 1, 2002, and continues to serve in that position.

The Board's Mission and Responsibilities. The Board's principal mission is serve as the primary advisor to the Secretary of Defense, the Assistant Secretary of Defense for Health Affairs, and the University President concerning academic affairs at USU. The Regents approve academic titles for military and civilian faculty members. Additionally, upon the recommendation of the University's faculty and Deans, the Regents approve the granting of appropriate academic degrees to successful candidates. The BOR recommends the establishment of postdoctoral and postgraduate programs, technological institutes, and programs in continuing medical education for military members of the health professions. The Regents may also recommend reciprocal education and research programs with foreign military medical schools. Additionally, the BOR is significantly involved with the University's strategic planning process. On April 4, 1999, the BOR's Charter, which outlines the mission, membership, duties and responsibilities of the BOR, was revised and approved by the Office of the Secretary of Defense (OSD); the most current edition of the BOR's Charter is dated April 4, 2003. In addition, the Bylaws of the Board of Regents were updated and approved on February 6, 2001. (Copies of the BOR Charter and Bylaws are at Appendix A.)

The Board's Eighth Annual Report to the Secretary of Defense.

Successful Implementation of Simulation Technology Training with Distance Capabilities. The National Capital Area Medical Simulation Center (SIMCEN) is a world-class, cutting-edge medical education facility, and serves as a template for more than 35 educational institutions currently attempting to employ similar simulation technology into their own medical education programs; the SIMCEN has been featured in a Discovery Channel Series and by major newspapers and professional journals. Today, this teaching facility is unique among the Nation's limited simulation centers because five state-of-the-art teaching components are included under one roof: standardized patients; multi-media, interactive, clinical case presentations on LAN or web-based CD-ROMs; virtual reality software applications; computerized mannequin simulators; and, video-teleconferencing and distance education capabilities. The SIMCEN uses technology and actors posing as patients to provide students and residents instruction on readiness skills and focused pre-deployment training for wartime, peacekeeping, and humanitarian missions. Through over 10,000 encounters, students and residents have gained experience in developing decision-making skills, familiarizing themselves with instruments and equipment and refining techniques and procedures.

- **The Honorable Donald Rumsfeld, Secretary of Defense, Narrative to Accompany the Award of the DoD Medal for Distinguished Civilian Service, Presented to the USU President on August 2, 2004.**

Since 1997, the USU Board of Regents has submitted an annual report to the Secretary of Defense. This report partially fulfills the Board's obligation to advise the Secretary on the University's operation and often focuses on contributions that USU makes to the Department of Defense. ***The 2004 Annual Report details the efforts of the USU National Capital Area Medical Simulation Center*** to address needs for realistic medical training and applied research as well as to pioneer new simulation technologies. ***For example, as a result of the Center's capabilities, USU was the first institution in the world to be approved by the American College of Surgeons to conduct Advanced Trauma Life Support Certification of surgical skills on medical simulators, rather than on animals or cadavers.*** The Center continues to play a major role in preparing military medical personnel to provide the best combat care ever, setting new standards for the survival of the wounded arriving at military medical treatment facilities. *(Detailed information on the USU National Capital Area Medical Simulation Center follows in this section of the Journal.)*

STRATEGIC PLANNING

A Perpetual Work-In-Progress. The USU Strategic Plan has been continuously evolving to reflect the changing requirements of the Strategic Plan of the Military Health System (MHS), which, in turn, is also linked with the Strategic Plans of the University's primary customers, the Surgeons General of the Army, Navy, and Air Force.

All Proposals for Funding Must Tie Into the USU Strategic Plan. Beginning with the USU Strategic Planning Process, initiated during 1991, an increasingly systematic approach has been developed for setting the University's priorities and allocating resources based upon relevance to the USU Strategic Plan. ***USU activity leaders must show a direct relationship with the current USU Strategic Plan when submitting their written requests for future budgets.*** Thus, a formal process has evolved for identifying program needs and for the submission of budget requests. Involvement of USU administration, faculty, and staff at both the formal and informal levels of the decision-making process assists in the equitable and ***mission-focused allocation of resources*** throughout the University's wide range of activities. The USU Strategic Plan is also used to develop the University's annual Program Objective Memorandum (POM) submission. The POM request, covering a five to six-year timeframe, is submitted to the Department of Defense, through the Office of the Navy Surgeon General, in order to gain the necessary funds for the USU budget as part of the Defense Health Program.

Strategic Planning Initiatives from 1998 through 2004. During 1998, the University updated the basic objectives under each of the goals of its Strategic Plan. Then, during 1999 through 2000, metrics or performance measurements were established and monitored for each objective. Next, to ensure that the USU Strategic Plan was accurately reflecting the evolving requirements of the MHS, on April 25-27, 2001, the senior staff of USU, representatives from the teaching hospitals, the Chair of the BOR, and senior staff from the offices of the Surgeons General met to participate in a three-day strategic planning session. The purpose of the retreat was to review and update the goals and objectives of the USU Strategic Plan so that they would appropriately reflect the current requirements of the MHS. Reference materials included the Strategic Plans of Health Affairs in the Office of the Secretary of Defense and the Surgeons General, the USU Strategic Plan, and survey results as they were recorded during the initial group discussions.

Through group interaction, the attendees of the 2001 retreat reviewed USU's internal and external customers and stakeholders. Then, the concerns of those stakeholders were identified, discussed, and weighted during an analysis of the strengths, weaknesses, opportunities, and challenges existing within USU's environment. Following those discussions, *seven strategic issues were identified: marketing; resources; people; USU as a strong advocate for the MHS direct care mission; education/research/partnerships; strategic thinking; and, communication.* Those seven strategic issues were carefully developed into seven strategic goals with forty-one objectives. Next, 22 of the most significant objectives were prioritized for initial implementation and action. At the conclusion of the 2001 strategic planning session, the focus of the University's mission statement was reviewed to identify a shorter, yet accurate reflection of the University's purpose and future focus; the attendees agreed on the following: ***Learning to Care for Those in Harm's Way.***

Goal Champions were appointed to oversee the development and implementation of the actions required to accomplish the objectives and ultimate realization of each of the seven goals. Finally, the attendees designated Team Leaders to develop action plans for accomplishing one, or more, of the prioritized

objectives; and, teams were formed to work on the selected objectives. Throughout 2001 and 2002, the staff, faculty, and students of the University continued their efforts to meet the goals and objectives of the 2001-2002 USU Strategic Plan. Individual progress reports on each of the seven goals were provided to the USU President who forwarded them to the USU Board of Regents. Over 250 members of the USU Community developed and implemented strategies under the seven goals and forty-one objectives as the University continued to focus on its mission statement - *Learning to Care for Those in Harm's Way*.

In December of 2002, the senior staff of USU, representatives from the Offices of the Surgeons General and the military teaching hospitals, the Chair of the BOR, and the USU Faculty Senate participated in a retreat to revise and update the 2001-2002 Strategic Plan. The group identified current issues facing the Nation and the University's stakeholders and realigned USU's resources and strategic goals and objectives to better meet the evolving requirements of military medicine. Five new goals (***Education; Military Service; Research; Leadership; and, Stewardship***) and 24 objectives were identified. To ensure that relevant objectives were retained from the 2001-2002 Strategic Plan, a working group was selected to integrate significant objectives into the new plan. **James G. Smirniotopoulos, M.D., Professor and Chair, USU SOM Department of Radiology and Radiological Sciences**, volunteered to lead the initiative to formalize the 2003-2004 Strategic Plan; the on-going process includes expanded faculty involvement in the development of the strategies. During May of 2003, the USU Board of Regents (BOR) voted to accept the newly designed USU Strategic Plan. As of May 2004, the following tasks have been accomplished: 1) establishment of a web site for the USU Strategic Plan <<http://www.usuhs.mil/strat/index.html>>; 2) reconciliation of the new USU Strategic Plan with the 2001-2002 Strategic Plan; 3) alignment of the new USU Strategic Plan with the Strategic Plan of Health Affairs in the Office of the Secretary of Defense; 4) finalization of priorities and the wording for the strategic goals; 5) presentation of the current plan to the University and Henry M. Jackson Foundation leadership; 6) selection of goal champions; and, 7) presentation to the USU Administrative Officers and the Faculty Senate. (The current USU Strategic Plan is at Appendix B.)

Progress Toward Achieving the University's Five Strategic Goals during 2004. *During 2004, the USU community incorporated the five strategic goals and 24 objectives into its on-going efforts to meet its mission and respond to the requirements of the MHS. The following are just a few selected examples of programs and accomplishments, which addressed the University's five strategic goals, during 2004.*

GOAL 1: EDUCATION: To meet the Nation's needs as the preferred source for uniformed health care education and training.

OBJECTIVE - USU will provide outstanding education to its students, focused on military readiness and homeland defense.

USU Has World-Wide Recognition as the One Place Where Physicians Are Trained to Respond to Weapons of Mass Destruction.

Other programs at USUHS in nuclear and biological warfare defense and operational medicine simply do not exist at any of the nation's civilian medical schools. At no other institution are medical students taught about the medical response to weapons of mass destruction. Only a handful of other medical schools offer courses in tropical medicine... At a time when this nation's military operations are diverse and changing, we need a corps of dedicated individuals who are trained and willing to respond to these challenges.

- **Jordan J. Cohen, M.D., President, Association of American Medical Colleges, Letter to the Deputy Secretary of Defense, April 27, 2005.**

This excellent health sciences university is now well established among the most highly respected of American health professional schools. I speak not only for myself but for the Association of Academic Health Centers and for the leaders of our member academic health science centers. USUHS and its leaders have worked with others in the Association of Academic Health Centers to advance the development of organized distance learning techniques in health professional education, in bioterrorism defense, in the strategizing about global health and domestically about the systemic delivery of population-based health care and preventive services, in all of which areas USUHS is in a leadership position.

- **Roger J. Bulger, President and CEO, Association of Academic Health Centers, Letter to the Deputy Secretary of Defense, April 28, 2005.**

For over 25 years, USU has been at the forefront of weapons of mass destruction (WMD)-related medical education. The University has successfully prepared its uniformed graduates to provide military-unique health care and expertise in austere conditions and to respond to injuries caused by chemical, biological, radiological, nuclear, and explosive (CBRNE) weapons. The USU SOM provides 20 more weeks of education than the typical civilian medical school. Where the average school of medicine (SOM)

in the United States offers 13 hours of preventive medicine training, the USU SOM provides 130 contact hours, providing its graduates with a solid background in tropical medicine and hygiene, parasitology, the use of epidemiologic methods, and preventive medicine. Where the DoD scholarship physicians receive between 50 to 132 hours of medical readiness training, the USU SOM students receive between 784 and 889 hours. A military-unique focus and operational training exercises are interwoven throughout the SOM curriculum; as a result, career-committed USU graduates with their military-unique education and extraordinary retention rates are providing quality care, continuity, and leadership throughout the Uniformed Services. *The Association of American Medical Colleges Reporter* has twice featured USU as the one place where physicians are trained for the medical response to WMD in its December issues of 1998 and 2001. In addition, during 2004, the Congress of the United States, the Secretary of Defense, the Chairman of the Joint Chiefs of Staff, the American Legion, the Military Coalition, the Military Alliance, and the USU Board of Regents once again validated USU's long-standing expertise in WMD-related training and expertise. (See MILITARY UNIQUE CURRICULUM in Section II of the Journal for breakout by Academic Year.)

OBJECTIVE - USU will coordinate with other agencies to develop and conduct specialized training for health care professionals (to include: 1) disaster and humanitarian relief; 2) weapons of mass destruction (WMD); 3) traumatic and post-traumatic stress; 4) preventive medicine for mission readiness; and, 5) force health protection and healthy lifestyles).

USU Programs Are Collaborating Throughout DoD and Other Federal Agencies in WMD-Related Areas of Expertise.

The Secretary of Defense refers to the USUHS graduates as the “backbone” of the Military Health System (MHS) and he has officially recognized that USUHS academic centers and research programs have established international credibility for: military unique medical expertise; communication and assessment of military medical humanitarian assistance training; addressing traumatic stress in uniformed and civilian health care communities; and, developing radiological countermeasures and unique training for the response to radiological emergencies.

- **The Military Coalition (35 Associations and Organizations)**, Letter to the Under Secretary of Defense for Personnel and Readiness, April 13, 2005.

Quality Assured Training for First Responders. In February of 2005, the USU Centers for Humanitarian and Assistance Medicine (CDHAM) and the Study of Traumatic Stress (CSTS) received \$1.5 million from the United States Congress to implement ***a collaborative initiative for the sharing of quality assured training in the medical response to weapons of mass destruction (WMD) with the uniformed and civilian Emergency Responder and Health Care Provider Communities across the Nation, via the Internet.*** This collaborative initiative will assist in the preparedness for, and recognition of, a WMD incident; it will be a multi-disciplinary, interactive, quality assured, and tiered program leading to the awarding of continuing medical education (CME) credits, continuing nursing education (CE) units, and

certificates of completion. The program is designed to reach a broad spectrum of uniformed and civilian students within the health care community, Federal health care responders, and others in the medical response community. The four primary disciplines include (but are not limited to) physicians, nurses, administrators (health care executives, emergency managers, city/county managers, etc.), and pre-hospital staff (law enforcement, emergency medical technicians, fire, hazmat, etc.). The program will be open to the public, free of charge, and available for anyone interested in enrolling. *Collaborative relationships have been developed over the past two years and subject matter experts identified with the United States Northern Command (NORTHCOM), the Reserve Components, the Department of Veterans Affairs (VA), the Office of the Secretary of Defense (OSD), the United States Public Health Service (USPHS), the Center for Disease Control and Prevention (CDC), and the Association of Academic Health Centers.* **The technology is being developed to capture/break out totals for:** 1) uniformed or civilian recipients of the training; 2) the primary disciplines of the students; 3) completed training by states and districts; 4) organizations represented; 5) CME/CE credits, units and certificates issued by discipline; and, 6) customer satisfaction information. **This data will be used to determine the cost avoidance generated for DoD** and will be made available to organizations, as appropriate. CDHAM expects to launch the program in early 2006. (See Section II, RESEARCH CENTERS AND PROGRAMS, CDHAM, for further information on this initiative.)

USU Is Home to Internationally Recognized Trauma Expertise. USU provides the internationally recognized ***Center for the Study of Traumatic Stress (CSTS)***, which ensures the continued provision of critically required medical expertise and consultative support relevant to the traumatic impact of combat, CBRNE-related incidents, crisis management, disaster response, and homeland defense. In collaboration with the Institute of Medicine, by early 2004, ***the CSTS had been instrumental in developing a national strategy for integrating mental health into a public paradigm for terrorism management and response.*** CSTS also participated in the NATO-Russian Advanced Scientific Workshop on Planning for Bioterrorism and consulted with the World Health Organization on issues related to bioterrorism and mental health. In 2004, CSTS conducted a workshop on ***War Psychiatry Today: From the Battlefield to the Homefront;*** the workshop examined the experience and preparation of military physicians for combat support in the Global War on Terror in Afghanistan and Iraq. The conference was attended by consultants to the Surgeons General, operational experts, and those who had recently returned from deployment, in Iraq and Afghanistan. The resulting recommendations provide a clear road map for psychiatric educators of military and combat psychiatry for medical school and postgraduate training, to include residency, fellowship, and continuing education. CSTS has already begun to implement these recommendations, both at the USU SOM and its residency program, as part of its work with the Services to meet doctrine and continuing education requirements. This workshop reflects ***CSTS's on-going commitment to training future medical officers who will lead the MHS Medical Corps.*** Significantly, the CSTS PROCITE database of citations and full text materials on trauma, disaster, terrorism, and combat has over 19,000 references that can be accessed for the most current information and recommendations on these topics; ***this database rivals any trauma specialty knowledge resource in existence.***

The CSTS provided Just-in-Time Training to disaster response field workers and teams deploying on a variety of missions including the Center for Disease Control's Morgue Mission in support of body recovery following the Tsunami of December 2004. A ***Push-Pack*** of educational materials was written and assembled in response to the Tsunami, which ***included up-to-date information on the health risks of body recovery, mitigation of psychological stressors for body handlers, grief leadership, and the unique circumstances of missing and unrecovered remains for family and loved ones, to include complicated bereavement.*** These definitive information and practical knowledge resources were provided to psychiatrists and mental health workers in Sri Lanka, Norwegian and Scandinavian Government Teams working with families whose relatives were dead or missing, Australian Trauma Teams, and international academicians in

the field of trauma and disaster. The CSTS also launched its *Courage to Care* health information campaign for the provision of just-in-time fact sheets relevant to deployed forces, uniformed personnel throughout the MHS, and the general public; the Center has received on-going commendation and appreciation for the fact sheets from the Reserve Components and its national and international collaborators. (See Section II, *RESEARCH CENTERS AND PROGRAMS, CSTS, for further information on this Center.*)

The Armed Forces Radiobiology Research Institute (AFRRI). AFRRI was chartered, in 1961, to conduct relevant applied radiobiological research in support of the military medical mission and to support accidental or premeditated events involving nuclear weapons, nuclear reactors, radiological dispersal devices, and other nuclear/radiological situations; the Institute was placed under USU for management in 1992. ***During 2004, AFRRI fielded medical training and provided rapid response in support of DoD missions and other Federal agencies; the following entities received support during the past year: 1) the Office of Science and Technology Policy (OSTP); 2) the National Naval Medical Center in Bethesda, Maryland; 3) the Department of Homeland Security (DHS)/Strategic National Stockpile; 4) the Department of Health and Human Services (DHS); 5) the Food and Drug Administration (FDA); 6) the Defense Threat Reduction Agency (DTRA); 7) the Department of Veterans Affairs (VA); 8) the National Aeronautics and Space Administration (NASA); 9) the National Institutes of Health (NIH); 10) the Centers for Disease Control and Prevention (CDC); and, 11) the Environmental Protection Agency (EPA). Also during 2004, AFRRI medical professionals and research experts provided the Medical Effects of Ionizing Radiation (MEIR) Course to 683 students at stateside and overseas venues. Health care and emergency response professionals who attended the course included 281 Army, 32 Air Force, and 79 Navy personnel, as well as, 291 students who were either Marine Corps, foreign military, Public Health Service, DoD civilian, or Coast Guard personnel. And during 2004, AFRRI launched its Radiation Biological Dosimetry Tools for Emergency Responders web page.***

The quality of ***AFRRI's science is globally recognized; for example, the following organizations were assisted by AFRRI's scientific experts during 2004: 1) the NATO Research Task Group 099 for Radiation Bioeffects and Countermeasures; 2) the NATO Research Task Group 006 for Radiation Injury and Medical Countermeasures; 3) the National Cancer Institute; 4) the National Research Council's Committee on Standards and Policies for Decontaminating Public Facilities Affected by Exposure to Harmful Biological Agents; 5) the United Kingdom Ministry of Defense; 6) the National Institute for Allergy and Infectious Diseases; 7) the NATO Human Factors and Medicine Panel Symposium; 8) the International Atomic Energy Agency Working Group; 9) the National Council on Radiation Protection and Measurements; 10) the United States Northern Command; 11) the Japanese Ground Self Defense Force; 12) the United States Army Heavy Metals Office, Stevens Institute of Technology; and, 13) the Army Center for Health Promotion and Preventive Medicine. Also of note, six Defense Technology Objectives (DTOs) were assigned to AFRRI, during 2004;*** they are described under the third goal in this section. (See Section VII for further information on AFRRI.)

USU, the Academic Center for Military Medicine, Provides Specialized Training for the Military Health System.

The American Medical Association has recognized that USUHS not only educates its own graduates, but also provides a significant national service through its continuing medical education courses for military physicians in combat casualty care, tropical medicine, combat stress, disaster medicine, and medical responses to terrorism, courses not available through civilian medical schools. Significantly, the Emerging Infectious Diseases Graduate Education Program provides courses on the agents and effects of bioterrorism and is the only graduate program in the Nation to offer formal training in these critical areas. *Over the past 13 years, USUHS has gained recognition and evolved into the Academic Center for Military Medicine.*

- **The Honorable Daniel K. Inouye, United States Senator, *Tribute to James A. Zimble, M.D., Congressional Record*, July 6, 2004, page S7575.**

Of note, *U.S. News and World Report* has ranked USUHS graduate programs in public health, which focus on community health, sixth in the nation for the last two years.

- **Michael D. Maves, M.D., MBA, Executive Vice President, CEO, the American Medical Association, Letter to the Deputy Secretary of Defense, May 6, 2005.**

During 2004, the University continued to serve as the Academic Center for Military Medicine for the 2,416 uniformed, off-campus USU faculty, who are located throughout the Military Health System (MHS). For example, ***during the USU Commencement Exercises of 2004, 38 uniformed officers received advanced degrees from the USU Graduate Education Programs*** (34 Masters Degrees and 4 Doctoral Degrees). Through its continuing medical education programs and academic centers, the University also presented military-relevant conferences and continued its collaborative efforts for the MHS.

The following are just a few selected examples of the superb response of the USU Educational Programs to the special needs of the Uniformed Services.

The Interdisciplinary Graduate Program in Emerging Infectious Diseases. This interdisciplinary Ph.D. training program is designed primarily for individuals who wish to devote their graduate training to the study of the pathogenesis, host response, and epidemiology of infectious diseases. The mission of the Emerging Infectious Diseases (EID) Graduate Program is to provide the scientific community with broadly-trained, outstanding scientists who can contribute significantly to the increasingly complex field of infectious disease mechanisms and pathogenesis. The importance of accomplishing these educational goals in the area of EID research cannot be underestimated given the increasing threats of bioterrorism and the risks associated with emerging and re-emerging infectious diseases. ***As part of the EID Program, courses on the agents and effects of bioterrorism are offered. To date, this program is one of the only graduate***

programs in the Nation to offer formal training in this critical area. Nine uniformed and civilian students entered the program, in August of 2004. (See Section IV, GRADUATE EDUCATION PROGRAMS, for further detail on this one-of-a-kind program.)

The USU SOM Graduate Education Programs in Preventive Medicine and Public Health Rank 6th in the Nation. Throughout 2004, the USU School of Medicine (SOM) Preventive Medicine and Biometrics (PMB) Graduate Programs continued on-going collaborative educational agreements with the Walter Reed Army Medical Center Preventive Medicine Residency Program and Internal Medicine Fellowship Program, the Army Program for Training in Health Services Administration, the United States Army Laboratory Animal Medicine Program, the Navy Dental Research Institute Program in Dental Public Health, and the Indian Health Service Environmental Health Training Program. In addition, the PMB Department is affiliated with the United States Army and Navy Overseas Biomedical Research Laboratories located in: Bangkok, Thailand; Rio de Janeiro, Brazil; Nairobi, Kenya; Cairo, Egypt; Jakarta, Indonesia; and, Lima, Peru. ***During 2004, the USU PMB Graduate Education Programs and Courses provided outstanding responsiveness to specific requests of the Uniformed Services; selected examples follow.***

- ***The Occupational Ergonomics Program.*** Recognizing the importance of occupational musculoskeletal injuries among military personnel and, in response to the Army's request for specialty training in occupational ergonomics within the USU Master of Public Health (MPH) Program, a new area of concentration was established, ***the Occupational Ergonomics Concentration in the PMB MPH Program.*** USU faculty collaborate with the Army Center for Health Promotion and Preventive Medicine and offer courses in ergonomics, injury control, and health and safety; a number of students have completed their MPH research in this area. ***The Occupational Ergonomics Program is the only established graduate-level injury prevention program in the Department of Defense.***

- ***The International Health Specialist (IHS) Program.*** Numerous After-Action Reports (AARs) indicated that Humanitarian Assistance (HA) and Disaster Response (DR) missions would benefit if members of the Air Force Medical System (AFMS) received additional training. The goal of the IHS Program is to prepare regionally-focused military medical experts who can help prepare uniformed forces for operational contingencies and the global response to medical crises, during combat or peacetime deployments. ***Each graduate understands the components, operations, and financing of health delivery services and has the administrative skills to plan, analyze, manage, and improve public health programs for the Uniformed Services. The graduate also understands the role that the United States military and other organizations and agencies play in addressing global health issues.*** Four students graduated from the IHS Program, during 2004; four additional IHS students are projected to graduate, in June of 2005.

- ***The Master of Science in Public Health (MSPH) Program.*** USU has graduated eight degree candidates between 2000 and April of 2005. Thirteen Army, Navy, and Air Force officers are currently enrolled in the Environmental and Occupational Health and the Health Physics specialties in the MSPH Program; two of these students are expected to graduate in 2005. The students and program faculty work closely with the Uniformed Services and other Federal and international organizations to ***identify and address current needs of operational forces and emergency responders. Past and current projects have included the development of chemical warfare detection methods and instrumentation.***

- ***The TriService Advanced Military Tropical Medicine Course.*** The PMB TriService Advanced Military Tropical Medicine Course has been offered at USU, beginning in 1996, through the Summer of 2004. During 2004, 82 military medical officer students were ***trained in operational military medicine, consisting of four weeks of lectures and laboratories in the advanced diagnosis and treatment of tropical diseases. Approximately 70 lecturers provided over 106.5 hours of didactic instruction. To date, over 505 students have completed the course.*** One hundred and thirteen continuing medical education hours (CME) were awarded during the past year; the overseas field missions were attended by 50 medical officers (El Salvador - 10; Bolivia - 10; Peru - 11; Guyana - 11; Cairo - 6; and, Thailand - 2). ***A medical officer used the training received in this course to make the initial diagnosis of malaria during the outbreak of malaria in Joint Task Force Liberia personnel, in 2003; an action that very likely prevented disability and saved lives.***

- ***The Tropical Medicine and Travelers' Health Course.*** The PMB Tropical Medicine and Travelers' Health Course is offered as a 12-week course during the Spring Quarter of the MPH Program. ***It includes lecture, seminar, laboratory and case-based curriculum approved by the American Society of Tropical Medicine and Hygiene and leads to eligibility for the qualifying examination in Tropical Medicine and Travelers' Health.*** To date, 37 uniformed medical officers and 14 civilian physicians have completed the course.

- ***The Diagnostic Parasitology Course.*** The Diagnostic Parasitology Course is offered as a series of lectures and hands-on laboratory sessions for individuals wishing to ***study parasitic infections in humans.*** Uniformed and civilian medical technologists and physicians from all parts of the world have completed this course. Since 1988, over 300 individuals have taken the course, to include 9 individuals who took the course, during 2004.

- ***Medical Executives Skills Program (MedExec).*** Integrating Clinical and Managerial Decisions to Improve Population Health, a five-day in-class portion of the MedExec Program, is held five times each year throughout CONUS and Atlantic and Pacific TRICARE Regions. ***The focus of the course is to equip health care professionals with the knowledge and tools needed to integrate clinical and business decisions to improve health care delivery and population health. To date, 37 sessions have been held in the TRICARE Regions and over 1,000 senior officers have been trained for the MHS.***

(See Sections II, RESEARCH CENTERS AND PROGRAMS, and IV, GRADUATE EDUCATION PROGRAMS, for further information on the PMB and other Graduate Education Programs at USU.)

OBJECTIVE - USU will develop and deploy continuing health education and distance learning programs to cost-effectively enhance the competency of military health care professionals in military unique curriculum.

USU Provides Nationally Recognized Continuing Education Credit. The USU Office of Continuing Education for Health Professionals (CHE) provides nationally recognized continuing education credit for physicians, nurses, psychologists, health care executives, and social workers through its accreditation by: 1) the Accreditation Council for Continuing Medical Education; 2) the American Nurses Credentialing Center's Commission on Accreditation as a Provider of Continuing Education in Nursing; 3) the American Psychological Association; 4) the American College of Healthcare Executives; and, 5) the State of Maryland Department of Health and Mental Hygiene Board of Social Work Examiners. ***This inclusive provision of continuing education for multiple disciplines, from one office, is believed to be unique within the Military Health System (MHS).*** During Fiscal Year 2004, to the present, there has been a marked increase in CHE's Internet activities that are focused on enhancing the competency of military health care professionals in military unique curriculum; ***the following selected examples are provided, at no cost, by the USU Office of CHE.***

DoD Smallpox Vaccination: Standard Training. The threat of smallpox provided the momentum for a partnership between the DoD Military Vaccine Agency (MILVAX) and USU. ***DoD Smallpox Vaccination: Standard Training*** consists of sessions grouped specifically for three levels of professional smallpox vaccination program responsibility. Since the beginning of this activity, 3,286 participants have successfully completed these sessions. Of these, 523 physicians, 325 nurses, and 27 ACHE members were able to earn the following credit: up to 53.5 continuing medical education (CME); 63.7 continuing nursing education (CNE); and, 10.5 category II (non-ACHE) credits. This program is available, *at no cost*, to the general public at <<http://dod.digiscript.com>>.

Military Vaccine Agency (MILVAX) Spokesperson Training Course. The ***Military Vaccine Agency (MILVAX) Spokesperson Training Course*** started during Fiscal Year 2004. It is a condensed version of a three-day conference, which provides a variety of information related tasks regarding the Anthrax Vaccine Immunization Program (AVIP) and the Smallpox Vaccination Program (SVP), through either an administrative or clinical focus. This activity is available, *at no cost*, to the general public at <<http://dod.digiscript.com>>.

On-Line Forum for Current Advancements in Deployment Medicine. The Journal of Special Operations Medicine is a quarterly, peer-reviewed journal geared to Special Operations Forces medical professionals. Its mission is to promote the professional development of Special Operations medical personnel by providing a forum for the latest relevant advancements in deployment medicine. USU provides continuing education to health providers who read the article(s) and successfully complete the post-test(s). The Journal of Special Operations Medicine is available, *at no cost*, at <<http://www.hurlburt.af.mil/jsou>>.

(Section VI of the Journal provides detailed information on the USU Office of Continuing Education for Health Professionals.)

OBJECTIVE - USU will ensure that all programs meet or exceed national standards for accreditation.

USU Programs Receive Maximum Terms of Accreditation.

Maximum Term of Accreditation with Commendation Is Granted to USU. The University received maximum accreditation, with commendation, from the Middle States Commission on Higher Education, during 2003, for a period of ten years. In addition to accreditation from the Middle States Commission, the USU Office of Continuing Education for Health Professionals (CHE) ensures the University's ability to provide nationally recognized continuing education credit for physicians, nurses, psychologists, health care executives, and social workers through continued accreditation by: 1) the Accreditation Council for Continuing Medical Education; 2) the American Nurses Credentialing Center's Commission on Accreditation as a Provider of Continuing Education in Nursing; 3) the American Psychological Association; 4) the American College of Healthcare Executives; and, 5) the State of Maryland Department of Health and Mental Hygiene Board of Social Work Examiners. Also, the University maintains full accreditation from the American Association for the Accreditation of Laboratory Animal Care (AAALAC) and the Nuclear Regulatory Commission (NRC). (See ACCREDITATION, which follows in this section of the Journal for further information.)

Maximum Term of Accreditation Continues for the School of Medicine. The accreditation process of the Liaison Committee on Medical Education (LCME) is designed to certify that a medical program meets prescribed standards; and, by awarding accreditation, the LCME indicates confidence in the quality of the medical school program. The USU School of Medicine (SOM) received provisional accreditation from the LCME in 1976; the SOM was fully accredited in 1979, and has continuously maintained that status. Following its last accreditation process, the LCME provided official notice, on April 13, 2000, that the SOM, to include the USU SOM Graduate Education Programs, had received continued maximum accreditation for the educational program leading to the Medical Doctor Degree for a seven-year term. The next full survey will take place during the 2006-2007 Academic Year.

In addition to its inclusion in the accreditation granted to the University by the Middle States Commission on Higher Education and the SOM's accreditation by the LCME, ***the following professional organizations continue to authorize accreditation for the various programs and activities of the SOM:*** 1) the Accreditation Council for Continuing Medical Education; 2) the Council on Education for Public Health (CEPH); 3) the American Psychological Association (APA) Committee on Accreditation; and, 4) the Accreditation Board for Engineering and Technology (ABET). Also, SOM Steering Committees are actively involved with the accreditation process for two additional areas of responsibility reviewed by: 5) the American Association for the Accreditation of Laboratory Animal Care; and, 6) the Nuclear Regulatory Commission. (See Section II, ACCREDITATION, for further information relevant to the School of Medicine; and, see ACCREDITATION in Section IV for further information relevant to the USU SOM Graduate Education Programs.)

Maximum Terms of Accreditation with Commendation Are Granted to the Graduate School of Nursing. The USU Graduate School of Nursing (GSN) has received maximum accreditation from its three accrediting entities: 1) on March 18, 2002, the University was formally notified of the action taken by the National League for Nursing Accrediting Commission (NLNAC) at its meeting held on February 27, 2002: **The Commission approved the Master Degree Program for continuing accreditation and scheduled the next evaluation visit for the Fall of 2009;** 2) on May 16, 2002, the USU GSN received official notification from the Commission on Collegiate Nursing Education (CCNE) that: **The CCNE Board of Commissioners acted at its meeting on April 20, 2002, to grant accreditation of the Master Degree Program in Nursing at the Uniformed Services University of the Health Sciences for a term of 10 years, extending to June 30, 2012. The Board additionally determined that there are no compliance concerns with respect to the key elements;** and, 3) on October 31, 2003, USU received notification that **the Nurse Anesthesia Program had been awarded a ten-year accreditation as the very first program in the Nation re-accredited under the new standards and the first to be granted the maximum ten-year re-accreditation.** The COA commended the University for its excellent program and noted zero critical weaknesses. (*See Section III, ACCREDITATION, for further information.*)

GOAL 2: MILITARY SERVICE: To provide graduates, faculty, and staff who serve as experts in the medical response to Disasters, War, and Humanitarian Crises.

OBJECTIVE - Produce skilled professionals with special orientation in those aspects of medicine, science, and nursing to support the Military and Federal Health Care Systems.

USU Graduates Provide Military-Unique Expertise and Present Clinical Skills Required for MHS Residency Programs and Certification Examinations.

School of Medicine Alumni.

USUHS alumni possess, at graduation, the essential knowledge, skills, and attitudes required during Joint Service Deployments.

- **The Honorable Donald H. Rumsfeld, Secretary of Defense,** Narrative Statement and Citation to accompany the Distinguished Civilian Service Award, August 2, 2004.

The quality of your graduates continues to serve as a testament to the quality of the teaching that was endorsed by the Middle States Commission. You and your staff continue to make significant contributions to our Nation's military readiness and our national medical preparedness.

- **The Honorable William Winkenwerder, Jr., M.D., Assistant Secretary of Defense, Health Affairs,** Letter to the USU President, July 22, 2003.

Evidence of the High Quality of USU SOM Training Comes from Many Sources. Each academic year, the Association of American Medical Colleges (AAMC), with the assistance of medical school administrators, conducts a survey of graduating seniors at medical schools throughout the United States. Students are asked to rate statements that cover their entire medical school experience. Included among the numerous topics surveyed are premedical preparation, pre-clinical education, clinical experiences, student services and the overall quality of the medical education received. The USU Office of Student Affairs reported that the ratings of the Year 2004 Medical School Graduation Questionnaire show a consistently strong, positive evaluation by USU students at a level well above the all-schools comparison. ***For example, 61.1 percent of the USU SOM seniors strongly agreed with the statement, Overall, I am satisfied with my medical education. Whereas, when averaging the replies from all responding medical schools in the United States, only 38.6 percent rated the statement as strongly agree.***

Traditionally, more than 75 percent of USU SOM graduates receive their first choice of specialty and location for their first year of residency training. ***The results of the 2004 Joint Service Graduate Medical Education (GME) Selection Board for the USU SOM Class of 2005 were favorable.*** The overall

selection rate for FIRST CHOICE programs was 66 percent; 112 out of 168 USU SOM students matched for their first choice both in specialty and training site. Sixteen additional students received their first choice in specialty for ***a resulting total of 76 percent who received first choice in specialty. Feedback obtained from residency program directors indicates that the SOM graduates are consistently recognized as well-prepared to complete graduate medical training.***

USU SOM students have consistently passed the United States Medical Licensing Examination (USMLE) Steps 1 and 2 at rates equal to, or higher than, the national average. In 1999, the National Board of Medical Examiners (NBME) began computer-based testing (CBT) for the USMLE Step 1 and 2 Examinations. The USUHS first-time pass average for the Step 1 Board Examination, during 2004, was 93 percent. ***Most of the USU fourth-year students (SOM Class of 2005) completed the Step 2 CBT between July and September of 2004. The overall performance for the Class of 2005 was strong; the average score for the class was 213; and, the pass rate was 93 percent.***

An example of the critical role of USU SOM graduates in the MHS was reported to the Congress in both 2002 and 2003, when the Surgeon General of the Navy testified that the Center for Navy Analysis (CNA) had provided significant data on the retention of physicians. The Navy Surgeon General informed the Congressional Committees that his most undermanned specialties were general surgery and all surgical subspecialties, orthopedic surgery, diagnostic radiology, anesthesiology, and urology. ***Many of these specialties are critical wartime specialties and shortfalls could have a negative impact on medical readiness. Overall, the median length of non-obligated service for physician specialists averages only 4.4 years. That average drops to 2.9 years when USU graduates are excluded; the median length of non-obligated service as a specialist for USU graduates is 9 years.*** Thus, the USU SOM alumni are providing essential support for medical readiness.

The critical requirement for USU SOM graduates has been independently documented for over ten years. For example, following an inclusive review in 1995, the General Accounting Office (GAO) confirmed that ***43 out of 44 commanders of major military medical units perceived that physicians from the University have a greater overall understanding of the military, greater commitment to the military, better preparation for operational assignments, and better preparation for leadership roles.*** The GAO reviewers also pointed out that ***they perceive that University graduates have a better appreciation of and greater satisfaction with the physician's role within the military*** than other accession sources (General Accounting Office Report, *Military Physicians - DoD's Medical School and Scholarship Program*, September 29, 1995, page 43). ***Congressional testimony, by the Surgeons General and the Office of the Assistant Secretary of Defense for Health Affairs, strongly reflects that these significant findings have been validated over the past ten years. (See ALUMNI in Section II of the Journal for further information.)***

Graduate School of Nursing Alumni.

The Federal Nursing Chiefs met with the program evaluators and gave testimony to their support of the GSN. Comments during the meeting with the Federal Chiefs included: 1) we are excited to see the quality of the students who graduate from this program... they are exceptional leaders; 2) we are directly involved in helping the School understand the type of skills graduates need and find them very responsive to our suggestions.

- Site Surveyors from the National League for Nursing Accrediting Commission, Final Report, Nov. 1, 2001.

GSN Alumni Have Established Extraordinary Results on National Certification Examinations and Performance Evaluations. The immediate measurable standard of success for the GSN alumni is the passing of the National Certification Examinations. ***Over 97 percent of the GSN graduates have passed the National Certification Examinations at the upper percentile, on their initial examinations.*** GSN graduates have excelled in achieving national certification as advanced practice nurses in their specialties, with a ***100 percent, first attempt pass rate from graduates of the Family Nurse Practitioner and Nurse Anesthesia Options in the MSN Program for the Class of 2004.*** Of the 103 Family Nurse Practitioner (FNP) graduates, all have passed their certification examination, with 100 doing so on their first attempt. To further illustrate the academic excellence of the GSN graduates, 12 of the 17 graduates from the GSN Nurse Anesthesia Program and the Navy Nurse Corps Anesthesia Program, Class of 2004, who took the certification examination for nurse anesthetists scored the maximum possible score of 600, ***the average score of the GSN NA Class of 2004 was 596.2 (with a standard deviation of 8), well above the national average, which was 551.5 (with a standard deviation of 63).***

Another short-term measure is the GSN graduate's performance as an advanced practice nurse, as determined by the graduate's immediate supervisor. One year after graduation, both the GSN alumni and their supervisors are concurrently surveyed. Immediate supervisors, familiar with the day-to-day performance of the GSN graduates, are queried regarding specific areas of the alumni's strengths and weaknesses in clinical specialty performance. This information is collated and compared to the graduates' self-performance ratings. In addition, the GSN asks its graduates to complete an end-of-program evaluation, followed by one-year and three-year (Family Nurse Practitioner only) post-graduation evaluations. Information from the surveys is tracked and trended to identify any needed revisions or additions to course or clinical content or experiences. ***Reviews of the end-of-program, alumni, and employer evaluation data by the GSN and the Federal Nursing Chiefs ensure that the GSN curriculum is meeting the requirements of the Uniformed Services. This process continued during 2004, with a strong overall response that reflects satisfaction with the GSN Alumni.***

During 2004, many GSN alumni were recognized by their services for their clinical skills and expertise through their ***appointments to the faculty of the Expeditionary Medical Support (EMEDS) Course***, USAF School of Aerospace Medicine, Brooks City-Base, Texas. The EMEDS Course is the state-of-the-art Air Force casualty care course that is attended by all deployed Air Force Medical Service personnel; ***and, the prestigious TriService Joint Readiness Clinical Advisory Board (JRCAB)***, located at Fort Detrick, Maryland. (See ALUMNI in Section III of the Journal for further information.)

Alumni of the USU SOM Graduate Education Programs.

The graduate programs at USU are important to the University for many reasons. They help to train a cadre of well qualified, experienced biomedical scientists and public health practitioners who will continue the tradition of scientific service to the Nation in the civilian and military worlds. Strong graduate programs are important because of the major effect active graduate programs have on the intellectual vitality of departments and programs. The presence of well-populated and thriving graduate programs is also an important factor in the recruitment of the best applicants for faculty positions at the University. USU graduate programs already serve these multiple needs.

- *VIII, Graduate Education in the Biomedical Sciences and Public Health, Subcommittee Report, Middle States Association of Colleges and Schools (MSA) Self-Study, submitted to the Evaluation Team representing the Middle States Commission on Higher Education prior to the site visit on March 30 - April 2, 2003.*

USU SOM Graduate Education Program Alumni Provide Essential Support to the Military Health System. The early founders of USU understood, that in order to gain and sustain accreditation, Graduate Education Programs had to be structured within the School of Medicine (SOM). The USU SOM admitted its first graduate students in 1977; ***since its establishment, through April of 2005***, a total of 845 advanced degrees have been granted by the University: 251 Doctors of Philosophy; 15 Doctors of Public Health; 82 Masters of Science; 457 Masters of Public Health (***more than 90 percent of the graduates of the MPH Program return to their individual Services and continue to hold public health positions throughout DoD***); 8 Masters of Science in Public Health; 28 Masters of Tropical Medicine and Hygiene; and, 4 Masters of Military Medical History. Of the 160 graduate education students enrolled during 2004, 114 were Ph.D. or DrPH students, and 46 were Master Degree candidates. Graduate Education Programs in the basic medical sciences benefit the USU and the Military Medical System by providing training opportunities for qualified active duty personnel of the Uniformed Services who receive authorization to participate in the USU graduate training programs under the sponsorship of their parent Services (***as reported in the 2004 USU Cost Avoidance Fact Sheet, 38 uniformed officers received advanced degrees during the May 2004 graduation ceremonies***). It is particularly gratifying for the USU faculty to note that a sizeable number of USU Graduate Program alumni hold career level appointments in DoD research, clinical, and educational agencies. Furthermore, a sizeable group of other graduates occupy responsible positions in other Federal government agencies concerned with the general maintenance of the Nation's health. (*See Goal 4, which follows, and Section IV for further information on the ALUMNI of the USU SOM Graduate Education Programs.*)

GOAL 3: RESEARCH: To be a leader in basic, clinical, and health services research to improve health care, to protect, sustain and enhance the fighting force and secure public health.

OBJECTIVE - USU will emphasize research and development relevant to military, Federal, and homeland security needs.

Essential Science Indicators, an ISI evaluation tool, ranks the top journals and nations, and the top 1 percent of scientists, institutions and companies by field of research. To be even listed in any one category, an institution has to be in the top 1 percent by number of citations in the period covered by Essential Science Indicators (ESI). For the period covering the last ten years, USU ranked in the top 1 percent in seven fields: Clinical Medicine; Immunology; Biology & Biochemistry; Microbiology; Neuroscience & Behavior; Psychiatry/Psychology; and, General Social Sciences. This ranking is based on the number of citations received by papers published by USU Faculty in the period.

- Ms. Ursula Scott, Assistant Vice President, USU Learning Resource Center, *Essential Science Indicators and USU*, USU Communications Network, February 17, 2004.

USU Research Is Directed Toward Military Requirements. The majority of the research programs and projects currently taking place at USU are focused on meeting the needs of the Uniformed Services. Research protocols, throughout USU, study diseases of high military relevance for troop deployment and sustainment. ***During 2004, the USU \$2.4 million INTRAMURAL RESEARCH PROGRAM consisted of 66 protocols, 38 awards for clinical research, and two projects in the areas of educational research. USU provided oversight, during 2004, for 13 multi-site, CONGRESSIONALLY FUNDED RESEARCH PROGRAMS; together, these 13 programs, funded at \$65 million, support more than 180 individual research projects conducted at USU and elsewhere.*** Federal agencies such as the National Institutes of Health (NIH), the National Science Foundation (NSF), the Department of Energy (DOE), the United States Army Medical Research and Materiel Command (USAMRMC), and the Office of Naval Research (ONR) support the ***EXTRAMURALLY FUNDED RESEARCH at USU; in 2004, extramural research included 136 projects funded at \$58.4 million.*** Over 400 active projects, funded at a total of \$126 million, continue to explore a wide span of scientific areas, including basic biomedical questions central to the mission of the MHS, such as: 1) the mechanisms, transmission and control of a wide range of infectious and/or common diseases that may be faced by warfighters; 2) a variety of crucial topics in combat casualty care, operational medicine, and health education and promotion; 3) women's health issues in the DoD; and, 4) the development of new methods for the diagnosis and treatment of medical problems faced by the United States military and their dependents.

The understanding gleaned by USU's military relevant research is opening avenues to better ensure medical readiness and quality care under austere circumstances. as reflected in the following selected examples.

- A USU trauma surgeon and his research team *evaluated a number of agents to control bleeding from wounds on the battlefield leading to the development and fielding of QuikClot, which is now included in a new aid bag; over 15,000 bags have been issued to Marines currently deployed in Iraq.*

- A USU off-campus faculty member worked with a USU-based team and *developed body-armor that is currently fielded, utilized in combat zones, and saving countless lives.*

- USU faculty and SOM alumnus are leading the Army's *Regional Anesthesia Pain Management Initiative* and have performed the procedure at the 31st Combat Support Hospital in Baghdad; regional anesthesia *allows continuous access for local anesthetic to control pain and is being used on the battlefield and in support hospitals to provide continuous pain control from the point of injury through extended evacuation to Germany and the United States.*

- USU is *part of a Middle Atlantic Region University Consortium* that was recently selected by the Department of Health and Human Services *as one of eight Regional Centers of Excellence for Biodefense and Emerging Infectious Diseases.*

- USU was *awarded a subcontract to provide a Select Agent Toxin Reference Laboratory for the Nation* through the Biodefense and Emerging Infections Research Resources Laboratory, sponsored by the National Institutes of Allergy and Infectious Diseases.

(See RESEARCH ADMINISTRATION from Section I and SELECTED PROFILES OF USU SOM FACULTY and RESEARCH CENTERS AND PROGRAMS in Section II of the Journal for further information on SOM Research.)

OBJECTIVE - *USU will emphasize research objectives established by Service and Joint Service medical requirement documents.*

The Armed Forces Radiobiology Research Institute (AFRRI) Research Programs Are Globally Recognized. Requests for presentations, briefings, collaborative agreements, provision of AFRRI-developed software applications, or on-going membership, during 2004, were listed in detail under the second objective of the first Goal in this section.

Six Defense Technology Objectives (DTOs) guide the thrust of AFRRI's research. A DTO is a specifically recognized high priority element of technology advancement. The product of a DTO is expected not only to enhance military operational capability, but also to address other important issues

such as affordability and dual-use application, both of which receive special emphasis in the Defense Science and Technology Strategy. Each of AFRRRI's six DTOs supports the Quadrennial Defense Review Transformation Operational Goal to Project and Sustain United States Forces. In direct response to its assigned DTOs, AFRRRI has achieved the following selected accomplishments: **1) AFRRRI investigators have demonstrated significant radioprotective qualities of a non-androgenic steroid, 5-androstenedial (5-AED).** The drug has no measurable toxicity at the doses being used to achieve protection; **5-AED** is on track for the submission of an investigational new drug application to the Food and Drug Administration (FDA), during the first half of Calendar Year 2005, to initiate clinical studies in the United States; **2) the AFRRRI Biological Dosimetry Team has developed the *Biodosimetry Assessment Tool (BAT) software program*, to promote the rapid collection of data for early use after a radiation exposure incident; to provide diagnostic and therapeutic information needed to manage radiation casualties; and, to record related clinical information. In 2004, AFRRRI launched the *Radiation Biological Dosimetry Tools for Emergency Responders web page* at <www.afrrri.usuhs.mil/www/outreach/biodostools.htm>; and, **3) AFRRRI's *Rapid Field-Based Depleted Uranium Detection Assay* has been patented and is expected to transition within the next two to three years. (See Section VII of the Journal for further information on research at AFRRRI.)****

OBJECTIVE - Develop institutional research for self study/enhancement.

USU Center for Health Disparities Research and Education. The USU SOM Departments of Medical and Clinical Psychology and Family Medicine were awarded a \$7 million grant from the National Institutes of Health (NIH) National Center on Minority Health and Health Disparities, to sponsor the USU Center for Health Disparities Research and Education, referred to as *Project EXPORT*. The Center's goal is to promote positive health-related change and ultimately eliminate disparities among racial and ethnic minorities through research, education, training, community outreach, and information dissemination. During 2004, the Center's Research Component sponsored four research projects, which utilized networks outside of traditional settings to eliminate health disparities, weight management studies, health assessment surveys, and cultural proficiency training to achieve the Center's goals. ***The Center's Education Component provided cultural sensitivity training for eight of the twelve Family Medicine Clerkship rotation sites at the various Army, Navy, and Air Force activities where USU medical students carry out their actual clerkships.*** The Community Outreach and Information Dissemination Component collaborated with multiple partners to solidify programs for high school students to tour USU and learn about careers in the health care field. Other partners worked with the Center to maximize the health care provider's encounter as a tool in reducing health disparities through its sponsorship of interactive workshops, presentations by improvisational actors, and the development of questionnaires. **Richard Tanenbaum, Ph.D., USU SOM Department of Medical and Clinical Psychology,** serves as the Principal Investigator. **David S. Krantz, Ph.D., Professor and Chair, USU SOM Department of Medical and Clinical Psychology,** is the Center Director; and, **Lori Dickerson-Odoms** is the Program Manager. (See *CURRICULUM RENEWAL and RESEARCH PROGRAMS AND CENTERS* in Section II of the Journal for further information on Project EXPORT.)

The USU Center for Medical Genomics and Proteomics Is One of Ten Academic Organizations Funded by NIH. **Harvey B. Pollard, M.D., Ph.D., Professor and Chair, USU SOM Department of Anatomy, Physiology and Genetics (APG),** is the principal investigator for an NIH-sponsored study on

the proteomics of cystic fibrosis; one of ten academic organizations in the Nation to win substantial support (\$12.7 million over seven years) from the NIH, the award supports the USU Center for Medical Genomics and Proteomics. There are ten centers for medical proteomics in the Nation, the USU Center focuses its research attention on the lung. ***The Scientist, one of the most respected scientific periodicals in the country, has cited the USU Center as the model on how to do drug discovery.*** The Center's research team includes 20 faculty members from various departments across the University. ***The Center's state-of-the-art research equipment is being made available to benefit researchers across the University.*** (See APG, Appendix C for further information.)

GOAL 4: LEADERSHIP: To develop and provide uniformed and Federal leaders for national health care service focused on mission readiness and homeland security.

OBJECTIVE - Ensure that faculty and alumni achieve positions of leadership in the Department of Defense and the Federal government.

USU School of Medicine Alumni Provide Continuity and Leadership for the MHS.

Reliability and Sustainability of Accession Sources: Of current accession programs, USUHS is the most reliable and cost-effective source for filling senior leader requirements. USUHS currently provides 23 % of all active duty physicians. Removing USUHS as an accession source introduces significant risk of physician shortfalls. Accessions from the Health Professions Scholarship Program (HPSP) alone are an unproven source for proper design and mix of the medical force structure. Congress and DoD created the current integrated and complementary triad of physician accession sources to provide the numbers, required specialties, and experience (rank) required to meet MHS missions. The HPSP provides the bulk of the required physicians of lower rank and experience, only 5 % of which remain on active duty beyond their initial obligations. USUHS provides a stable cadre of career military physicians and other healthcare professionals in all specialties.

- **The Honorable William Winkenwerder, Jr., M.D., Assistant Secretary of Defense for Health Affairs, Briefing on USU before OSD Leadership, April 18, 2005.**

The SOM graduating Class of 2004 was the twenty-fifth class to receive Medical Degrees from USU. ***As of April 2005***, of the total 3,587 medical school graduates, 2,695 remain on active duty in the Uniformed Services (Army - 1,035; Navy - 780; Air Force - 792; USPHS - 88); and, ***the 2,607 USU SOM alumni on active duty in the Military Health System represent over 22.7 percent of the active duty physician force in the DoD, which totals 11,495 physicians.*** The average USUS physician graduate is serving approximately 20 years on active duty.

The critical role of USU graduates in providing medical readiness was reported to the senior leadership of OSD by the Assistant Secretary of Defense, Health Affairs, on April 18, 2005. That briefing validated the need for USUHS as a guaranteed and proven source for the right physician leaders, which will become even more important as DoD fights future wars.

USU graduates have become well respected in their medical specialties and provide continuity and leadership for the MHS, serving in areas of military medicine ranging from special operations and hospitals, to the White House, and the newly established Department of Homeland Security, to deployments in Afghanistan and Iraq, and to assignments aboard ships at sea or with the Blue Angels. Currently, **Brigadier General Charles Fox, MC, USA, USU SOM Class of 1981**, is serving as the Commanding General at the Brooke Army Medical Center and Great Plains Regional Medical Command at Fort Sam Houston, Texas. **Brigadier General Bill Germann, USAF, MC, USU SOM Class of 1982**, is commanding the

89th Medical Group, Malcolm Grow USAF Medical Center, at Andrews Air Force Base, Maryland; and, **Brigadier General Thomas Travis, USAF, MC, USU SOM Class of 1986**, is currently serving as the Commander of the 311th Human Systems Wing, Brooks City-Base (formerly Brooks Air Force Base), Texas. *Examples of promotions to 0-6 during 2004 include the following:* **Army** - 35 percent of the medical corps officers selected for promotion to Colonel were USU SOM graduates; **Navy** - There were 197 physicians considered for promotion to 0-6, in or above zone; overall, 28 physicians were selected for promotion. Of the 21 USU alumni considered for promotion, in or above zone, 6 were selected, resulting in a 28.6 percent selection rate (as compared to the 11.4 percent selection rate for the non-USU physicians being considered); **Air Force** - 45 physicians were selected for promotion to 0-6; the 17 USU SOM alumni selected for promotion represented 38 percent of those selected for promotion. (See Section II, *SOM ALUMNI*, for further examples of SOM Alumni accomplishments, which are individually provided for each Graduating Class.)

USU Graduate School of Nursing Alumni Provide Leadership for the MHS.

For military health care providers, *the fight* is different. They must be prepared to care for the sick, save lives, and beat the odds in severe environments. Many people think those odds are diminished severely after an injury on the battlefield. But, with the right preparation in operational readiness, nurses and physicians can make the difference.

- Nursing Spectrum, *Caring for Those in Harm's Way*, Volume 13, No. 6DC, March 24, 2003, page 8.

Numerous USU GSN Alumni Were Providing Leadership for the MHS, during 2004; Selected Examples Are Provided.

Lieutenant Colonel Nancy Heisterman, USAF, NC, GSN Class of 1997, Family Nurse Practitioner, left her position as Chief of Utilization Review at the David Grant Medical Center, Travis Air Force Base, California, to start a new Nurse Transition Program at Nellis Air Force Base, Nevada. The new program is part of the hospital's professional education department.

Colonel Bridget Larew, USAF, NC, GSN Class of 1998, Family Nurse Practitioner, moved from her previous position as the Medical Services Flight Commander at Bolling Air Force Base, Washington, D.C., in the Fall of 2004; she is currently drafting and implementing AE Policy at the Pentagon.

Major Brian Todd, USAF, NC, GSN Class of 1999, Nurse Anesthesia, is an expert in field equipment; he was one of the first USAF CRNAs to use specialized anesthesia equipment in an austere environment. Due to his expertise, he was named to the prestigious TriService Joint Readiness Clinical Advisory Board (JRCAB) at Fort Detrick, Maryland. The JRCAB establishes equipment policy for the Services.

USU SOM Graduate Education Program Alumni Provide Leadership for the MHS.

The USUHS shall: 4.3. Grant applicable advanced academic degrees; establish postdoctoral and postgraduate programs, and technological institutes; conduct medical readiness training and continuing education for members of the Uniformed Services in the health professions; and prepare individuals for careers in the health professions in the Uniformed Services.

- DoD Directive 5105.45, dated March 9, 2000, page two.

The Following Are Selected Examples of the Achievements of the USU Graduate Education Program Alumni.

Class of 1994. Commander Margaret A.K. Ryan, MC, USN, MPH, Director, DoD Center for Deployment Health Research, Naval Health Research Center, San Diego, California, USU Graduate Program Class of 1994, who received a Master of Public Health Degree from USU, heads a team at the Naval Health Research Center that has worked on several initiatives to support, directly or indirectly, those uniformed personnel deployed to Operation Iraqi Freedom. Those initiatives include: equipping Naval Environmental Preventive Medicine Unit 5 and several ships (forward deployed) to better detect and rapidly diagnose pathogens causing respiratory illness in service members; assisting with the development of augmented post-deployment health assessments, as required by the Office of the Assistant Secretary of Defense, Health Affairs; partnering with the Centers for Disease Control (CDC) to address health concerns related to smallpox and anthrax vaccinations; and, standing ready to expeditiously assess the epidemiology of post-deployment health concerns.

Class of 1995. CAPT Maura Emerson, MPH, MC, USN, Force Medical Officer, Military Sealift Command, Washington Navy Yard, USU Graduate Program Class of 1995, who received a Master of Public Health Degree from USU, is responsible for the smallpox and other immunization tracking programs for all of the military and civilian contractors in the Military Sealift Command. CAPT Emerson also received her Medical Degree from USU, in 1988. **CAPT H. Jeffrey Yund, USN, USU Graduate Program Class of 1995**, who received a Master of Public Health Degree from USU, is currently the Preventive Medicine Officer at the Headquarters of the Marine Corps, where he serves as the Principal Advisor for Deployment Health Surveillance and the Smallpox and Anthrax Immunization Programs.

Classes of 1996 and 1998. Lieutenant Colonel Jeffrey Adamovicz, USAF, Ph.D., USU Graduate Program Class of 1996, who received a Doctoral Degree in Microbiology from USU, serves as the Chief of the Bacteriology Division of the United States Army Medical Research Institute of Infectious Diseases at Fort Detrick, Maryland. **Lieutenant Colonel Mark Arness, USAF, USU Graduate Program Class of 1998**, who received a Master of Tropical Medicine & Hygiene Degree from USU, is serving as an Air Force Preventive Medicine Officer at the Army Medical Surveillance Activity and Defense Medical Surveillance System, where he is responsible for post-deployment health surveillance and involved in adverse event surveillance following vaccination. **CAPT Ken Schor, USN, USU Graduate Program Class of 1998**, who received a Master of Public Health Degree from USU, is serving as the Preventive Medicine Officer at the Bureau of Medicine and Surgery (BUMED), where he serves as the Principal Advisor to the Surgeon General for Deployment Health Surveillance and the Smallpox and Anthrax Immunization Programs.

Classes of 1999 and 2000. CAPT Ed Kilbane, USN, USU Graduate Program Class of 1999, who received a Master of Public Health Degree from USU, is a team leader of the forward deployed Naval Environmental Preventive Medicine Unit (NEPMU-7) in a classified operational location. **Lieutenant Commander Tanis Batsel, USN, USU Graduate Program Class of 2000**, who received a Master of Public Health Degree from USU, is assigned as the Chief of the Preventive Medicine Branch for the United States Northern Command and the North American Aerospace Defense Command (NORAD) at Peterson Air Force Base, Colorado; he also graduated from the USU SOM, in 1993.

Classes of 2001 and 2002. Major Philip L. Gould, MPH, DTMH, USAF, MC, Preventive Medicine Consultant, Deployment Health Surveillance/Suicide Surveillance, Epidemiology Services Branch, Air Force Institute for Environmental Safety and Occupational Health Risk Assessment, Brooks City-Base, Texas, USU Graduate Program Class of 2001, who received a Master of Public Health Degree from USU, is assigned with deployment surveillance for all of the Central Command (CENTCOM) and assisting command units at the Air Force Institute for Environmental Safety and Occupational Health Risk Assessment (AFIERA). Personnel at AFIERA are at the forefront of surveillance for deployed troops, with responsibilities to provide routine briefs and reports for: the Secretary of Defense; the Assistant Secretary of Defense, Health Affairs; and, the Joint Chiefs of Staff. **Commander Byron Connor, USN, USU Graduate Program Class of 2002**, who received a Master of Public Health Degree from USU, is a member of the forward deployed Naval Environmental Preventive Medicine Unit (NEPMU-2) in a classified operational location. (*See Section IV, ALUMNI, for further information on the graduates of the USU SOM Graduate Education Programs.*)

OBJECTIVE - Ensure that faculty and alumni achieve positions of leadership in professional and scientific organizations.

USU Faculty Are Recognized for Leadership and Expertise.

Faculty at USUHS are widely recognized among those of peer institutions for the excellence of the medical education program and are frequent invited speakers at our annual meetings on this important topic.

- **Jordan J. Cohen, M.D., President, Association of American Medical Colleges**, Letter to the Deputy Secretary of Defense, April 27, 2005.

This excellent health sciences university is now well established among the most highly respected of American health professional schools. I speak not only for myself, but for the Association of Academic Health Centers and for the leaders of our member academic health science centers.

- **Roger J. Bulger, M.D., President and CEO, Association of Academic Health Centers**, Letter to the Deputy Secretary of Defense, April 28, 2005.

Essential Science Indicators, an ISI evaluation tool, ranks the top journals and nations, and the top 1 percent of scientists, institutions and companies by field of research. To even be listed in any one category, an institution has to be in the top 1 percent by number of citations in the period covered by Essential Science Indicators (ESI). For the period covering the last ten years, USU ranked in the top 1 percent in seven fields: Clinical Medicine; Immunology; Biology & Biochemistry; Microbiology; Neuroscience & Behavior; Psychiatry/Psychology; and, General Social Sciences. This ranking is based on the number of citations received by papers published by USU faculty in the period.

- **Ms. Ursula Scott, Assistant Vice President, USU Learning Resource Center**, *Essential Science Indicators and USU*, February 17, 2004.

As of November 2004, there were 329 full time faculty members at USU (208 civilians; 121 uniformed officers) with 3,999 off-campus faculty (1,583 civilians; 2,416 uniformed officers). USU faculty members are regularly selected to serve on various study sections for the National Institutes of Health and for other research-granting agencies.

Many USU faculty members, due to their national/international reputations are:

- ***Selected to Serve on Editorial Boards.*** Colonel Andrew J. Satin, USAF, MC, Professor and Chair, USU SOM Department of Obstetrics and Gynecology, is a member of the Editorial Board of Obstetrics and Gynecology, the premier journal of his specialty; and, Robert E. Goldstein, M.D., Professor and Chair, USU SOM Department of Medicine, serves on the Editorial Boards of the American Journal of Cardiology and the Journal of the American College of Cardiology;

- ***Validated as the Equals of their Colleagues at other Medical Schools and Universities.*** In 2004, seventy-five USU faculty were the recipients of over \$28 million in investigator-initiated, peer-reviewed funding; USU faculty publish extensively in high impact peer-reviewed journals; a USU faculty member leads one of ten state-of-the-art national proteomic centers funded by the National Heart Lung and Blood Institute; USU faculty are leading participants in a regional consortium of institutions funded by the National Institute of Allergy and Infectious Diseases to develop a Center of Excellence for Biodefense and Emerging Infectious Diseases; and, in recognition of its faculty, USU has been designated by the American Type Culture Collection as the reference center for toxins recognized as select agents in bioterrorism;

- ***Recognized as Senior Officers and Recipients of Distinguished Awards in a Wide Variety of Professional Organizations.*** Major Steve Durning, USAF, MC, Associate Professor, USU SOM Department of Medicine, was selected to receive one of the most prestigious awards offered by the American College of Physicians, the **Herbert S. Waxman Award, during 2004**. The award is designed to provide national recognition to an outstanding medical educator. Major Durning, a general internist, directs the ***Introduction to Clinical Reasoning Course*** for second-year medical students; he has developed a variety of innovative measures that have significantly improved medical student performance on both standardized tests and clinical practicum. **Retired USU President, James A. Zimble, M.D., was selected as the Health Leader of the Year** by the Commissioned Officers Association of the United States Public Health Service (USPHS). Vice Admiral Zimble, USN (Ret.) was recognized for his commitment to performance-based leadership, force protection, technologic innovation, rapid reaction to global threats, and humanitarian crises;

- ***Featured in the National Media.*** During 2004-2005, Michael J. Daly, Ph.D., Associate Professor, USU SOM Department of Pathology, continued to conduct research in genome-based, high-throughput technologies of the radiation resistant bacterium *Deinococcus radiodurans*. Dr. Daly published an experimental paper in Science magazine, in November of 2004, showing that intracellular manganese accumulation facilitates radiation resistance. The paper was reported in newspapers and the research will be featured in a National Geographic Special, in 2005. A summary of this work was also published by Nature. Dr. Daly also brought in two new research grants from the Department of Energy to support his on-going work in radiation biology, totalling \$1.3 million. A USU researcher, **Christopher C. Broder, Ph.D., Associate Professor, USU SOM Department of Microbiology & Immunology**, was recognized in the Proceedings of the National Academy of Sciences (PNAS) for his leadership of one of two groups to independently publish the identity of the human protein that facilitates infection by the Nipah and Hendra viruses. These two emerging infectious animal diseases are transmissible to humans and are considered as possible bioterror agents. Knowing both the viral and cell proteins involved in fusion will allow scientists to develop vaccines and treatments for these two important emerging infectious diseases; his research is funded by the National Institute of Allergy and Infectious Diseases (NIAID);

- ***Routinely Selected to Serve on University, Military, and Federal and Professional Organization Committees in a Variety of Leadership and Service Capacities.*** During 2004, **Emmanuel G. Cassimatis, M.D., Professor, USU SOM Department of Psychiatry, and USU SOM Associate Dean for Clinical Affairs**, was elected to serve as Chair of the Accreditation Council for Graduate Medical Education (ACGME) for a two-year period, effective October 1, 2004 (*he replaced Charles L. Rice, M.D., who was subsequently selected by the Secretary of Defense to serve as the fifth President of USU*). Dr. Cassimatis continues to serve on the American Medical Association (AMA) Council on Medical Education and on the AMA/American Board of Medical Specialties (ABMS) Liaison Committee on Specialty Boards, as the Immediate Past Chair for both organizations. He additionally serves on the Board of Managers of the Association of Military Surgeons of the United States (AMSUS), as the AMSUS Delegate to the AMA House of Delegates, and as the Vice President of the National Medical Veterans Society. **Colonel Andrew J. Satin, USAF, MC, Professor and Chair, USU SOM Department of Obstetrics and Gynecology**, became the first uniformed member appointed to the Accreditation Council for the Graduate Medical Education (ACGME) Residency Review Committee for Obstetrics and Gynecology. This twelve-member group is responsible for accreditation decisions for all Obstetrics and Gynecology Residency Programs in the United States. Dr. Satin also serves as an Oral Examiner for the American Board of Obstetrics and Gynecology. **Louis Pangaro, M.D., Professor of Medicine, Vice-Chairman, Educational Programs, USU SOM Department of Medicine**, was selected to serve as President of the Alliance for Clinical Education (ACE), a multidisciplinary group formed in 1992, to foster collaboration across specialties to promote excellence in the clinical education of medical students; its members represent all seven of the national organizations of clerkship directors; and,

- ***Recognized for Having Achieved National and International Recognition in the Military-Unique Practice of Health Care.*** During 2004, a USU-based campaign, *Courage to Care*, was conceived by **Robert J. Ursano, M.D., Professor and Chair, USU SOM Department of Psychiatry, and Director, USU Center for the Study of Traumatic Stress**. In general, the campaign is geared toward the entire DoD community: active duty service members; members of the National Guard and Reserves; their families; and, the health and community providers who serve them. *Courage to Care* consists of ready-to-use fact sheets written for physician providers, as well as servicemen and women, on topics about military life and health. The first two fact sheets are titled, ***Reintegration Roadmap - Shared Sense of Purpose*** (for the health and social service provider) and ***Becoming a Couple Again - Creating a Shared Sense of Purpose*** (for military couples experiencing the transition). Doctor Ursano ensures that *Courage to Care* serves as an extension of USU's work in educating health providers and in enhancing their communication skills with the military family.

(Sections II, III, IV, V, and VII of the Journal include specific recognition of faculty in the SOM, GSN, Graduate Education Programs, Graduate Medical Education, and AFRRRI; Appendix C provides selected examples of individual faculty and group achievements.)

GOAL 5: STEWARDSHIP: We will protect and enhance the human and physical resources of the University, optimize productivity, promote a sense of family and community, while emphasizing flexibility in response to changing world conditions.

OBJECTIVE - USU will recruit, reward, and retain outstanding and diverse students, faculty, and staff.

Construction Design, Additional Space, and Renovation Projects During 2004 Help to Retain and Recruit Students, Faculty, and Staff.

Construction of a New Building on the USU Campus. The University was first able to participate in the Military Construction (MILCON) Program in 1999; since that time, the USU President and the Vice President for Administration and Management (VAM) have led extensive coordinating efforts to increase available classroom and administrative space at USU through the construction of a new building. On September 25, 2001, USU was informed by the Bureau of Navy Medicine and Surgery (BUMED) that its construction project (***Building E - USU Academic Program Center***) had been placed as a funded project in the Medical MILCON, for Fiscal Year 2006. On January 7, 2003, the TRICARE Management Activity (TMA) authorized the design of the USU Academic Program Center at a cost of \$9.6 million and approved the project as an accelerated Program for Design; On July 20, 2004, the total cost was increased to \$10.35 following the S-4 Design Meeting with TMA; the design process was completed during mid-2005, with construction slated to begin in mid-2006 (*the overall project calls for 55,220 gross square feet, which includes underground parking; the Program for Design distributes 39,969 gross square feet*).

Navy Base Reallocation of Space to USU Results in Renovation Projects, during 2004. Since 1998, the University President and the VAM have coordinated with the National Naval Medical Center (NNMC) for the *reallocation of Buildings 28, 53, 59, 79, and 139 to USU for a total of 48,140 gross square feet of laboratory, administrative, and general support/maintenance areas*. On-going renovation took place, during 2004.

Laboratory Renovations throughout Buildings A, B, C, and D. Laboratory space, throughout Buildings A, B, C, and D, has been renovated from 1993 through 2004, totalling 43,578 square feet (50.1 percent of the 86,926 square feet of laboratory space on the USU campus). During 2004, \$2,301,879 was funded for laboratory renovations by the USU Facilities Division through collaborative efforts by the VAM; the USU Facilities Division; the Dean, SOM; the USU Vice Presidents for Research and Resource Management; and, Navy Facilities (NAVFAC).

Strategic Planning for Facilities Maintenance. Nine years ago, the USU VAM coordinated with NAVFAC to develop a five-year facilities maintenance plan for the USU complex; that plan has now evolved into the current *Project Listing Process*. As all documentation has already been completed with NAVFAC, the Project Listing Process enables USU to utilize year-end funding. Projects totalling \$7,497,848 were obligated, by the end of 2004. As a result, the USU campus is well maintained and reflects excellent stewardship on the part of the USU leadership. (*See STEWARDSHIP at the end of this Section*)

of the Journal for detailed information on the construction of Building E, the Navy allocation of Space to USU, renovation of laboratory space, and facilities maintenance.)

Approval of USU Faculty Salary Schedules Is Essential for the Retention and Recruitment of Qualified Faculty. The Principal Deputy Assistant Secretary of Defense (Force Management Policy) approved salary schedules for the USU AD employees, during July of 2004. ***Significant to these efforts is the acquired ability for USU senior management to pay up to Executive Level I for any position that has been designated as essential and where the University must pay higher than the salary schedules to recruit and retain exceptional faculty and staff; this capability was accomplished due to the efforts of the USU President and the VAM.*** The salary schedules were updated, during January of 2005, to reflect the current pay status of Executive Level I. These on-going efforts are essential in order to attract and retain mission-essential faculty and staff at the University, which, in turn, enhances USU's ability to attract quality students.

USU Efforts for Human Capital Development.

Development Activities. During 2004, **Cindy C. Wilson, Ph.D., Professor, USU SOM Department of Family Medicine**, coordinated on behalf of her department with the SOM Offices of Faculty Affairs and Medical Education to sponsor numerous courses and seminars, which strongly supported faculty development, at USU. During 2004, 195 USU faculty members earned over 1,000 hours of continuing education. The USU Mentor Program and the USU Toastmasters International Club received support and guidance, throughout 2004. In addition numerous training opportunities were provided to the USU civilian workforce: 165 training vouchers and 75 on-line subscriptions for computer-related training for the Microsoft Office Suite; and, 441 employees were trained on-site, to include 70 attendees at the Ethics Training Classes. In addition, the Executive Leadership Program, New Leader Program, and Aspiring Leader Program have been on-going; four employees were sponsored in these programs, during 2004. (See *ORGANIZATIONAL CULTURE, Personal Development and Retention, which follows in this Section of the Journal for further information.*)

Cultural Diversity, Orientation, and Recognition Activities, Strengthened by the Timely Sharing of Information. During 2004, the USU Equal Employment Opportunity (EEO) Special Emphasis Program offered two major events to reinforce both the understanding of, and the appreciation for, the cultural diversity that exists, throughout USU. The events were attended by over 500 members of the USU community. Since October of 2000 through 2004, USU has provided formal sessions of the USU Orientation Program to 535 in-coming civilian and uniformed members of the USU community; 122 employees attended four sessions held, during 2004. To date, the USU President has personally presented service awards to 236 designated employees at their work sites; and, the Office of Military Personnel approved, processed and presented 71 awards for the USU military personnel, during 2004. In addition, the 2003/4 Edition of the USU Journal, the USU Cost Avoidance Fact Sheet, the USU Briefing Paper summarizing the current USU Journal, and on-going issues of USU Medicine have communicated the personal and group accomplishments and efforts of the USU community via hard copies, web sites, and CD-ROMs. (See *ORGANIZATIONAL CULTURE, Communicating Equal Opportunity Principles and Appreciation of Diversity, in this Section of the Journal for further information.*)

OBJECTIVE - USU will work to ensure that all USU initiatives and activities are characterized by the principles of ethics and accountability.

Cost-Avoidance Generated for the Department of Defense and the USU Ethics Program Ensure Accountability and Ethical Standards for USU.

USU 2004 Fact Sheet on Cost Avoidance. A four-page USU Fact Sheet on Cost Avoidance has been documented and produced, since 1997. The Fact Sheet reflects an in-depth coordination effort led by the Vice President for Administration and Management with the School of Medicine (SOM) Clinical Departments, the USU Office of Continuing Education for Health Professionals (CHE), the USU Military Training Network (MTN), the SOM Office of Graduate Education, and the Graduate School of Nursing (GSN). Documentation was finalized, during May of 2004, to include four USU programs (***Clinical and Consultative Services - \$16,094,907*** - data is now available to show that the average number of hours of patient care and consultation provided each year is over 140,000 hours; 144 USU faculty members provided 147,301 hours, during 2004; ***CHE - \$4,769,942***; ***MTN - \$11,372,044***; and, ***Graduate Education - \$1,340,000***), which validated that **\$33.6 million of cost-avoidance** was generated by USU for the Department of Defense, during 2004. This self-reporting survey has become increasingly important in USU's on-going effort to document its significant products and services. (*This subject is discussed in more detail under OPTIMIZATION, which follows in this section of the USU Journal.*)

Office of Government Ethics Review Finds USU Ethics Program Provides Quality Advice and Counseling Services. The Office of Government Ethics conducts periodic program reviews to evaluate agency ethics programs throughout the Executive Branch of the Federal Government. These reviews are conducted to ensure compliance with *Standards of Ethical Conduct for Employees of the Executive Branch*. The USU Ethics Program was reviewed, in the Fall of 2002, and a report was issued on December 10, 2002. The report highlighted that the University... ***continues to operate a strong and meaningful ethics program*** and provides... ***high quality advice and counseling services***. The report concluded... ***we are pleased to report that the University's Ethics Program continues to comply with applicable ethics laws and regulations***. There were no recommendations for improvement of the USU Ethics Program. On December 13, 2002, the Office of Government Ethics issued an electronic newsletter, which read in part... ***the University, Congressionally established to train men and women for careers as medical officers in the military services and Public Health Service, faces unique ethics challenges, which it successfully addresses***. The USU Ethics Program continued its activities and support functions, throughout 2004.

RELEVANCE - MISSION ACCOMPLISHMENT

USU Graduates Provide Continuity and Leadership and Ensure Medical Readiness.

The School of Medicine. *Continuity and leadership ensure both readiness and the preservation of lessons learned during combat and casualty care*; these were significant factors that motivated the Congress of the United States and the Executive Office of the President to recommend and approve the establishment of USU and the Health Professions Scholarship Program (HPSP) as complementary sources of accession for uniformed physicians. In 1972, Public Law 92-426, *the Uniformed Services Health Professions Revitalization Act*, established the HPSP to be a flexible source for the quantity of physicians required by the Armed Forces; and, *USU was established to provide a cadre of military medical officers who would serve a career as active duty physicians and effectively ensure continuity and leadership for the MHS.*

Reliability and Sustainability of Accession Sources: Of current accession programs, USUHS is the most reliable and cost-effective for filling senior leader requirements. USUHS currently provides 23 % of all active duty physicians. Removing USUHS as an accession source introduces significant risk of physician shortfalls. Accessions from the Health Professions Scholarship Program (HPSP) alone are an unproven source for proper design and mix of the medical force structure. Congress and DoD created the current integrated and complementary triad of physician accession sources to provide the numbers, required specialties and experience (rank) required to meet MHS missions. The HPSP provides the bulk of the required physicians of lower rank and experience, only 5 % of which remain on active duty beyond their initial obligation. USUHS provides a stable cadre of career military physicians and other healthcare professionals in all specialties.

Potential Risk of Change: Absent any one of the three accession sources, it is unlikely that the remaining two can support an all-volunteer military medical force. CNA (Center for Navy Analysis) estimates that it would require at least 895 additional HPSP accessions annually to replace the current 165 USUHS graduates. This may not be feasible in today's environment for medical school applicants. Currently, there is a general decline in the number of U.S. medical school applications, an increase in the number of female applicants (who generally have less or little long term interest in military service), and a general decrease in medical students applying for HPSP scholarships (currently less than one applicant for each HPSP slot). Additionally, current HPSP recruitment practice favors the accession of physicians less likely to specialize in meeting critical wartime requirements.

Retention: USUHS graduate retention is greater than other sources. The USUHS Alumni represent approximately 13 % of new medical officer accessions, 23 % of the total medical officer force, and 33% of those in the ranks of 0-5 and 0-6. Reliance on other sources would require a larger recruitment pipeline (to ensure numbers and specialty mix), reduce assignment flexibility, and ultimately increase total system costs.

- The Honorable William Winkenwerder, Jr., M.D.,
Assistant Secretary of Defense for Health Affairs,
Briefing on USU before OSD Leadership, April 18,
2005.

Continuity. With the graduation of the 25th School of Medicine (SOM) Class in May of 2004, 3,587 uniformed officers had been granted Medical Degrees. **As of April 2005, the 2,607 USU physicians on active duty in the Armed Forces represented 22.7 percent (one out of every five) of the 11,495 physicians on active duty in the Army** (Total Army Physicians - 4,140; USU Army Physicians - 1,035), **Navy** (Total Navy Physicians - 3,855; USU Navy Physicians - 780), **and Air Force** (Total Air Force Physicians - 3,500; USU Air Force Physicians - 792); the congressional founders had hoped for a representation of ten percent. (In addition, there are 88 USU SOM alumni on active duty in the United States Public Health Service; therefore, **as of April 2005**, a total of 2,695 USU SOM graduates remain on active duty.)

Leadership. Currently, **25 percent of the Specialty Consultants to the Army, Navy and Air Force Surgeons General are USU alumni** (44 of 176). As quoted above, from a recent briefing by the Assistant Secretary of Defense for Health Affairs, **USU alumni represent 33 percent of those in the ranks of 0-5 and 0-6.** Examples of promotions to 0-6 during 2004 reflect the following: **Army - 35 percent of the Army medical corps officers selected for promotion to Colonel were USU SOM graduates;** Navy - There were 197 physicians considered for promotion to 0-6, in or above zone; overall, 28 physicians were selected for promotion. **Of the 21 USU SOM Navy alumni considered for promotion, in or above zone, 6 were selected, resulting in a 28.6 percent selection rate** (as compared to the 11.4 percent selection rate for the non-USU physicians being considered); **Air Force - 45 physicians were selected for promotion to 0-6; the 17 USU SOM Air Force alumni selected for promotion represented 38 percent of those selected for promotion.** (See Section II, *ACHIEVEMENTS OF THE SOM ALUMNI*, for further examples of leadership.)

Independent Studies Reflect that USU SOM Graduates Are the Most Cost-Effective Accession Source for Filling Senior Positions in the MHS and USU SOM Alumni Are Well Prepared for, and Succeed in, Operational and Leadership Positions. During 2003, the Center for Navy Analysis (CNA), conducted an in-depth study entitled, *Life-Cycle Costs of Selected Uniformed Health Professions*, part of which included the development of a Cost Model Methodology. In Phase II of the study, CNA used the cost and historical retention patterns from Phase I, in addition to current constraints and business practices. CNA, in its summary report of Phase II, page one, stated that **USU is the most cost-effective accession source for filling 0-6 grade physician requirements.** This directly validates the September 1995 GAO Report, *Military Physicians - DoD's Medical School and Scholarship Program*, page 43, which states that **43 out of 44 commanders of major military medical units perceived that physicians from the University have a greater overall understanding of the military, greater commitment to the military, better preparation for operational assignments, and better preparation for leadership roles.**

On March 15, 2005, CNA reported to the Assistant Secretary of Defense, Health Affairs, in *Life-Cycle-Cost Model Excursions Related to USUHS*, that when they used a model “with no USUHS accessions and the same experience minimum requirements as the baseline, the model brings in an excess of 2,919 HPSP physicians in an attempt to fill the seniority requirements. Obviously, this is not feasible in execution, but it demonstrates the difficulty of filling seniority requirements without an accession source like USUHS.” **CNA estimates that it would require at least 895 additional HPSP accessions annually to replace the current 165 USUHS graduates. This is not feasible in today's environment for medical school applicants;** currently, there is only one applicant for each HPSP slot. Without a doubt, the continuity and leadership, provided by the USU SOM alumni, ensure medical readiness and the preservation of lessons learned for the MHS.

Medical Readiness.

Support to Military Operations: The need for USUHS as a guaranteed and proven source for the right physician leaders will be even more important as DoD fights future wars. Because of their selection and subsequent training, USUHS graduates seek assignment to operational units in large numbers (51 % of medical officers assigned to Army Special Forces are USUHS graduates). These core competencies have value not only for our military operational mission but also in DoD's support for Homeland Security. Refereed publications report that USUHS is the premier source of training for readiness, contingencies, community and public health, and other mission imperatives.

- The Honorable William Winkenwerder, Jr., M.D., Assistant Secretary of Defense for Health Affairs, Briefing on USU before OSD Leadership, April 18, 2005.

The Secretary of Defense refers to the USUHS graduates as the “*backbone*” of the Military Health System (MHS) and he has officially recognized that USUHS academic centers and research programs have established international credibility for: military unique medical expertise; communication and assessment of military medical humanitarian assistance training; addressing traumatic stress in uniformed and civilian health care communities; and, developing radiological countermeasures and unique training for the response to radiological emergencies.

- The Military Coalition (35 Associations and Organizations), Letter to the Under Secretary of Defense for Personnel and Readiness, April 13, 2005.

USU is the Nation's only University dedicated to ensure medical readiness for the MHS. In the December issues of both 1998 and 2001, the Association of American Medical Colleges (AAMC) Reporter recognized USU as the *one place where the physicians of tomorrow do get thorough preparation to deal with the medical aspects of chemical and biological terrorism. USU students learn how nuclear, biological, and chemical agents act on the human body and what to do in the event of a suspected exposure - from detection to decontamination and medical countermeasures.* Recent verification also was provided on April 27, 2005, when **Jordan J. Cohen, M.D., President, Association of American Medical Colleges,** wrote to the Deputy Secretary of Defense that “*At no other institution are medical students taught about the medical response to weapons of mass destruction. Only a handful of other medical schools offer courses in tropical medicine.*”

The MHS must provide quality health care during humanitarian, civic assistance, or operational contingencies. This critical medical response requires that physicians in the MHS be provided a solid background in tropical medicine and hygiene, parasitology, and the use of epidemiologic methods and preventive medicine. USU students are provided with approximately 130 hours of study in these areas, compared to about 13 hours found in the typical civilian medical school curriculum. In addition, the multi-Service environment of USU facilitates the students' understanding of the cultures and vocabularies of the United States Army, Navy, Air Force, and Public Health Service, which ensures two of the essential

components of readiness: *flexibility and continuity during joint service operational contingencies*. And, the USU SOM has implemented innovative efforts to meet the evolving requirements of medical readiness: the newly established National Capital Area Medical Simulation Center and the USU Patient Simulation Laboratory; the SOM Department of Biomedical Informatics; and, the recently established interdisciplinary graduate program, Emerging Infectious Diseases (*see Section II for a detailed description of these SOM programs*).

On May 6, 2005, **Michael D. Maves, M.D., M.B.A., Executive Vice President, CEO, The American Medical Association (AMA)**, wrote to the Deputy Secretary of Defense that *“The AMA vigorously supports the continuance of USUHS because we believe it is vital to the continued strength, morale, and operational readiness of the military services... In a time of widely-held fears of a looming shortage of physicians and health care providers, this retention powerhouse (USUHS) is an increasingly valuable resource for the Military Health System and the nation.”*

The Graduate School of Nursing.

The USUHS Graduate School of Nursing is also becoming the military’s major source of advanced practice military nurse clinicians, nurse anesthetists, and nurse leaders prepared for deployment in direct support of combat operations. Agencies accrediting civilian academic health centers, schools of medicine, and graduate schools of nursing have consistently awarded USUHS accreditation with distinction.

- **The Honorable William Winkenwerder, Jr., M.D., Assistant Secretary of Defense for Health Affairs,** Briefing on USU before OSD Leadership, April 18, 2005.

In 1993, Congress directed the initiation of a demonstration program for the preparation of family nurse practitioners to meet the needs of the Uniformed Services. In the short time since its establishment, the USU Graduate School of Nursing (GSN), with the strong cooperation and support of the Federal Nursing Chiefs, has: 1) recruited a qualified faculty; 2) successfully established curricula for the Family Nurse Practitioner, Nurse Anesthesia, and Perioperative Clinical Nurse Specialist options in its Master of Science in Nursing (MSN) Program; 3) identified accredited clinical practice sites and completed memoranda of understanding (MOUs) for those relationships with 21 military treatment facilities, to include an additional 111 non-DoD, Federal, and civilian clinical sites; 4) developed and implemented an administrative structure that provides for faculty and student participation in the overall governance of the GSN; 5) submitted self-studies and received maximum terms of accreditation, with commendation, for its MSN Degree Program from its three professional accrediting entities; 6) received formal approval from Health Affairs, Office of the Secretary of Defense, as a permanently funded DoD Program on February 26, 1996; 7) initiated, implemented, and continuously reviewed the outcomes evaluation process for its academic program (*of the 103 Family Nurse Practitioner (FNP) graduates, all have passed their certification examination, with 100 doing so on their first attempt; thus, the GSN FNP graduates have a 97 percent first attempt pass rate; twelve of the seventeen graduates from the GSN Nurse Anesthesia Program and the Navy Nurse Corps Anesthesia Program, Class of 2004, who took the certification examination for nurse anesthetists scored the maximum possible score of 600; the average score of the GSN NA Class of 2004 was 596.2, well above*

the national average, which was 551.5); 8) collaborated with the Department of Veterans Affairs and utilized state-of-the-art technology to establish distance learning options (*resulting in the DoD's first virtual graduation at the advanced level and a total of 70 virtual graduates*); 9) established a Doctoral Program in Nursing Sciences with the enrollment of its Charter Class in the Fall of 2003; and, 10) as of April 2005, granted Masters of Science in Nursing Degrees to 231 advanced practice nurses (*including 7 MSNs granted through distance learning*) with over 80 percent of its graduates remaining on active duty. The GSN has gained recognition as the first advanced practice nursing school in the United States to serve the Uniformed Services with a clear mission of ***Learning to Care for Those in Harm's Way***.

Advanced Degrees Earned Through Distance Learning. The GSN has enjoyed an on-going, successful eight-year collaborative relationship with the Department of Veterans Affairs (VA). The 20-month VA/DoD Distance Learning Program has been recognized as a model for cost-effective collaboration. ***At its inception, it was the first program in the Nation to offer a complete nurse practitioner curriculum via distance education.*** The collaborative efforts of the GSN with the VA in the area of distance learning successfully demonstrated a cost-effective form of advanced education where nursing students received advanced training in critically-required specialty areas, while maintaining their current positions at the VA medical centers. Twenty-six students, through a *virtual commencement exercise*, graduated from the VA/DoD Distance Learning Program on May 18, 1999; an additional student completed requirements during August of 1999, bringing the total to 27 graduates from the first class. The virtual graduation was broadcast from USU and linked with eight VA Medical Centers located across the United States. All graduates were eligible to sit for the American Nurses Association Credentialing Examination for Adult Nurse Practitioners. This graduation marked the first virtual advanced-level graduation for either the VA or DoD. Outcome data from present students, alumni, and employers reflect high levels of satisfaction with the distance learning program. A second class, with 33 students located in ten VA Medical Centers, graduated on May 15, 2001. And, a third class of ten students graduated on May 13, 2003. *To date, 70 individuals have successfully graduated from this exceptional distance learning program.* The program was halted following the third graduation because the VA had reached its target goal for Nurse Practitioners. To ensure that other Federal entities could easily access the lessons learned during this Program, a joint report was issued by the GSN and the VA Nursing Strategic Healthcare Group, in November of 2000. The report, *The VA/DoD Post-Master Adult Nurse Practitioner Distance Learning Program - From Concept to Graduation*, documents, in chronological order, the formulation of the partnership between the DoD and the VA, the conceptual stages and developmental processes, learning strategies, course evolution, assessment methodologies, clinical experiences, and the transmission effectiveness for the entire program. Future initiatives between the GSN and the VA are being considered with an emphasis on improving nursing practice and health care for veterans, to include the newly established GSN Doctoral Degree Program. (*See Section III for a detailed description of this GSN program.*)

A Clinical Nurse Specialist Option is Established. The Federal Nursing Chiefs identified a need for a *Clinical Nurse Specialist (CNS) option in the GSN MSN Degree Program*, in June of 2001. The new program option was presented to, and favorably received by, the USU Executive Committee, in January of 2002; next, it was presented to the USU BOR and received formal approval, on February 27, 2002. The Perioperative Clinical Nurse Specialty (PCNS) option, within the GSN MSN Degree Program, began with the Class of 2005, which matriculated eight uniformed officers, in June of 2003; nine students entered the CNS option, in June of 2004.

A Doctoral Degree Program in Nursing Is Established. To meet the evolving requirement for nursing research relevant to the MHS, the United States Public Health Service (USPHS), and other Federal Health Systems, in March of 2002, with the approval of the Federal Nursing Chiefs, the GSN began the process for the development of a ***Doctoral Program in Nursing***. The Program's mission is to prepare nurses to be uniquely qualified as leaders in research, education, and clinical practice and to serve in the MHS, the USPHS, and other Federal Health Systems. Additionally, with the well-recognized national shortage of both staff nurses and nursing faculty, GSN doctoral graduates must be prepared to augment faculty requirements at educational organizations and to serve as researchers for studying health care in the MHS, USPHS, and other Federal Health Systems. *A Doctoral Program that has a focus on the MHS, as well as the USPHS and other Federal Health Systems, is not available at civilian universities; no other institution is better positioned than the USU GSN to provide a Doctoral Program with such a unique focus.* The new program accommodates both full-time and part-time students and will incorporate aspects of both distance and alternative learning. *The GSN welcomed its Charter Class of three full-time and ten part-time students in the GSN Doctoral Program in June of 2003; twelve additional students (four full-time and eight part-time) were enrolled, in 2004.*

In Addition to the SOM and GSN Alumni and Achievements, Five Other OSD-Recognized, Significant Areas of Support and Products Are Provided by USU for the MHS.

Clinical Support for the Military Health System. *As reported in the 2004 USU Cost Avoidance Fact Sheet*, during their course of teaching, 144 USU faculty members (92 uniformed; 52 civilians) provided over 147,301 hours of clinical care at the Army, Navy, and Air Force Medical Treatment Facilities (MTFs) in the National Capital Area. Without this significant provision of support during 2004, the MTFs would have had to augment their medical staffs by 147,301 work hours in order to maintain the level of patient care within the direct care system of the MHS.

The USU SOM Graduate Education Programs. ***As of April 2005, the SOM Graduate Degree Programs have conferred a total of 845 advanced degrees:*** 251 Doctors of Philosophy; 15 Doctors of Public Health; 82 Masters of Science; 457 Masters of Public Health; 8 Masters of Science in Public Health; 28 Masters of Tropical Medicine and Hygiene; and, 4 Masters of Military Medical History. ***As reported in the 2004 USU Cost Avoidance Fact Sheet, 38 uniformed officers received advanced degrees*** (34 Masters Degrees and 4 Doctoral Degrees), ***during the May 2004 USU graduation.*** The USU SOM Graduate Education Programs are responsive to the special needs of the Military Health System (*a detailed discussion on the superb responsiveness of the USU Graduate Education Programs is provided in Section IV of the Journal*).

The USU SOM Office of Graduate Medical Education. ***The USU Office of Graduate Medical Education (GME) provides essential support for the MHS in that it serves as the Administrative Office and provides oversight for the National Capital Consortium (NCC). The USU SOM Office of GME collects and evaluates data on DoD GME programs to ensure academic and scientific excellence; and, it provides consultation and advice for the Dean of the SOM, the President of USU, and others throughout the MHS on military-unique medical curricula.*** During 2004, all of the GME programs in the National Capital Area were under the cost-effective sponsorship of the NCC, bringing the current total to 65 programs. The NCC,

by supplying leadership and resources, complies with the Accreditation Council for Graduate Medical Education (ACGME) institutional requirements and ensures that Consortium-sponsored programs comply with ACGME program requirements (*see Section V of the Journal for further information*).

The USU Office of Continuing Education for Health Professionals and the USU Military Training Network. The USU Office of Continuing Education for Health Professionals (CHE), to include the Military Training Network (MTN), provides significant, cost-effective and relevant support for the MHS by facilitating the continued professional growth of health care professionals, throughout the MHS. In carrying out its principal responsibilities, ***as reported in the 2004 USU Cost Avoidance Fact Sheet, CHE sponsored continuing medical education for 969 activities with an attendance of 7,409 physicians; provided continuing nursing education for 88 activities with an attendance of 2,532 nurses; approved 34 programs of Category II (non-ACHE) continuing education credit for 692 members of the American College of Healthcare Executives; provided eight continuing education activities for 72 psychologists; and, four activities for 101 social workers.***

The mission of the MTN is to develop and implement policy guidance and ensure compliance with curricular and administrative standards for resuscitative and trauma medicine training programs for the Uniformed Services and the DoD affiliates. The DoD sites affiliated with the USU MTN are approved to conduct self-sustained resuscitative and trauma medicine training; this continues to prove cost-effective for the MHS because it eliminates the need to pay premium training costs for civilian resuscitative and trauma medicine programs. ***As reported in the 2004 USU Cost Avoidance Fact Sheet, 205,709 DoD personnel were trained through the USU MTN (see Section VI of the Journal for further information).***

USU Serves as the Academic Center for 2,416 Active-Duty Faculty in the MHS. USU serves as the Academic Center for academic and research activities for 2,416 active-duty, off-campus USU faculty located throughout the MHS. ***USU on-site faculty have sponsored, hosted, or participated in the major conferences held by the MHS, during 2004; in addition, military relevant consultation is continuously provided to the MHS and other Federal agencies by the internationally recognized experts within the University's multiple centers, departments, programs, and institutes.*** As previously addressed under RESEARCH, the third goal of the USU Strategic Plan, *the military-relevant research conducted at USU, in collaboration with many hundreds of off-campus USU faculty assigned throughout the MHS, addresses critical issues for the Armed Forces.* The knowledge documented by the on-site and off-site USU faculty, through their collaborative research, is opening new avenues to: enhance the quality of clinical care; and, better control, diagnose, protect, and provide treatment for millions of MHS beneficiaries.

(All of the products and services, described above, are resourced as part of the operating budget of the University and are discussed throughout this report.)

ACCREDITATION

In 2003, the University received the maximum term of ten years of accreditation with commendation from the Middle States Association on Higher Education.

- **The Honorable Daniel K. Inouye, United States Senator, *Tribute to James A. Zimble, M.D.*, Congressional Record, July 6, 2004, page S7575.**

The Middle States Association of Colleges and Schools.

Background. The University is accredited by the Middle States Association of Colleges and Schools Commission on Higher Education (MSA/CHE). The MSA/CHE is an institutional accrediting agency recognized by the United States Secretary of Education and the Commission on Recognition of Postsecondary Accreditation. Following its establishment in 1972, USU received *candidate for accreditation status* from the MSA/CHE, in 1977, and has retained accreditation, since 1984. In order to maintain the accreditation of the educational programs, within the School of Medicine and the Graduate School of Nursing, the University must receive accreditation from the MSA/CHE. Based upon the results of an institutional self-study and an evaluation by a team of peers and colleagues assigned by the MSA/CHE, accreditation attests to the judgment of the MSA/CHE that an institution has met the following criteria: it is guided by well-defined and appropriate goals; it has established conditions and procedures under which its goals can be realized; it is accomplishing its goals substantially; and, it meets the standards of the MSA/CHE.

In 1993, the University underwent a successful institutional self-study and a reaccreditation site visit by the MSA/CHE. As requested by the MSA/CHE, a Periodic Report was submitted by USU to the MSA/CHE, in June of 1998. In July of 1998, the MSA/CHE reported that the USU Periodic Report was... ***to be applauded for its serious and candid review of the areas of concerns pointed out by the Middle States Evaluation Team in 1993.*** The MSA/CHE correspondence further emphasized that... ***it is clear that USUHS is responding to its internal and external environments and preparing aggressively for the future.*** On December 1, 1998, the USU President was notified by the MSA/CHE that the University had been granted accreditation, with no follow-up required. The next evaluation visit by the MSA/CHE was scheduled for the Spring of 2003.

Preparation for an Evaluation Visit. The MSA/CHE does not prescribe a particular institutional planning process. However, it does strongly suggest that planning be conducted within the context of the institution's goals, priorities, resources, and commitments. This means, at a minimum, that the institution has: carried out a thorough examination of its mission; reviewed its internal and external environments to form preliminary estimates of its strengths, weaknesses, opportunities, and threats; developed and implemented a formal system for setting priorities and for developing budgets, strategies, activities, and timetables; and, devised an evaluation procedure for systematically reviewing self-study planning, the self-study process, and self-study findings and recommendations. A steering committee must be established that is responsible for providing leadership to the entire self-study process, to include: determining the key issues for the self-study; preparing the design; developing charges to the subcommittees and coordinating their work on the various issues studied; ensuring that the timetable is implemented as planned; arranging

for one or more campus hearings to review drafts of the self-study; and, overseeing the completion of the final self-study report. In accordance with the above, the USU President established a steering committee to draft a self-study design proposal; the design proposal was submitted to the MSA/CHE staff liaison, in April of 2001, for review and approval. The MSA/CHE liaison visited the USU campus on May 18, 2001, and met with members of the USU administration, the Board of Regents, and students and faculty; the outcome of the visit was quite positive, with only one recommendation for USU on the inclusion of information on how outcomes assessment would be integrated into the self-study document. The self-study design was revised to include the MSA/CHE liaison's recommendation and received approval in August of 2001. During September of 2001, the University established fifteen self-study subcommittees. Draft reports were scheduled for submission to the steering committee, beginning in early February of 2002; subcommittee final reports were due to the steering committee in May of 2002. The steering committee reviewed and merged the subcommittee reports into one comprehensive report for the MSA/CHE. A draft of the comprehensive report was circulated to the University for review and comment. Revisions were incorporated, as appropriate, into the draft document by the steering committee prior to the final review by the Office of the USU President; copies were then submitted to the MSA/CHE. The submission of all required documents to the MSA/CHE was completed, during February of 2003.

A Middle States Evaluation Team Visits the University. Following the receipt and review of the USU Self-Study, an Evaluation Team representing the Middle States Commission on Higher Education visited the USU campus on March 30 - April 2, 2003. The Team indicated a positive review of the University upon the conclusion of their visit. ***On July 1, 2003, the University President was notified by the Middle States Commission on Higher Education that USU had received accreditation with commendation with the next self-study to be conducted during 2012-2013.***

Fourteen Accrediting Entities Ensure that Educational Standards Are Met by the University. In addition to the MSA/CHE accreditation, the following thirteen professional organizations continue to authorize accreditation for the University's schools and programs:

SOM: 1) the Liaison Committee on Medical Education (LCME); 2) the Accreditation Council for Continuing Medical Education (ACCME); 3) the Council on Education for Public Health (CEPH); 4) the American Psychological Association (APA) Committee on Accreditation; 5) the Accreditation Board for Engineering and Technology (ABET);

GSN: (6) the National League for Nursing Accrediting Commission (NLNAC); 7) the Council on Accreditation of Nurse Anesthesia Programs (COA); 8) the American Association of Colleges of Nursing Commission on Collegiate Nursing Education (AACN/CCNE); and,

University: 9) the Nuclear Regulatory Commission (NRC); 10) the American Association for the Accreditation of Laboratory Animal Care (AAALAC); 11) the American Nurses Credentialing Center's Commission on Accreditation; 12) the American College of Healthcare Executives (ACHE); and, 13) the State of Maryland Department of Health and Mental Hygiene Board of Social Work Examiners.

(Individual discussions on the accreditation of the School of Medicine, the Graduate School of Nursing, the Graduate Education Programs, the Graduate Medical Education Program, and the Office of Continuing Education for Health Professionals are provided in Sections II, III, IV, V, and VI of this report.)

**OPTIMIZATION - OSD RECOGNITION OF USU's MULTIPLE PRODUCTS
TWO SIGNIFICANT OSD AWARDS
THE GENERATION OF COST-AVOIDANCE
CENTER OF NAVY ANALYSIS REPORTS**

Thank you for your letter and the information on the Uniformed Services University of the Health Sciences (USUHS) as well as the 2002 Edition of the USU Journal. It is gratifying to see the University provide continuity and leadership for ensuring medical readiness. Alumni are highly trained and will no doubt continue their tradition of providing first-rate Military Health System support. The Cost Avoidance Fact Sheet is further evidence of your commitment and dedication... Please convey to Admiral Zimble my deep appreciation for the hard work he and the people of USUHS are doing for those of us in uniform.

- **General Richard B. Myers, Chairman of the Joint Chiefs of Staff, Letter to USU, November 20, 2003.**

OSD-Conducted Surveys Recognize USU's Academic Certification and Faculty Credentials.

In mid-1997, Management Reform Memorandum 3, Office of the Secretary of Defense (OSD), called for a study of the educational and professional development programs sponsored by OSD. That study and the efforts of the Defense Reform Task Force led to the Defense Reform Initiative's decision to establish an office of the Chancellor for Education and Professional Development (*this office was later disestablished*). Throughout 1997 and 1998, the USU Vice President for Administration and Management (VAM) coordinated the University's participation in intensive surveys on streamlining education throughout DoD. The University provided inclusive responses to the Office of the Deputy Assistant Secretary for Civilian Personnel Policy; those responses included all of the services and products resourced by USU as part of its operating cost. ***The OSD-conducted surveys mark the first official OSD recognition of the multiple products of USU in addition to its medical school graduates.*** As a result of those surveys, and based on the average course length of the continuing education efforts of the University, OSD analysts identified approximately 188 student man years, *in addition to*, the 814 (as reported in November of 2003: SOM - 674; GSN - 66; Graduate Education - 74) uniformed students who are traditionally credited, each year, to USU.

During 1998, in response to DoD's Defense Reform Initiative Directive 41, a two-part survey on faculty credentials was conducted by the USU VAM. ***The Office of the Deputy Assistant Secretary for Civilian Personnel Policy concluded, as in August of 1997, that USU had the strongest academic certification and faculty credentials among all activities surveyed.***

USU Comprehensive Annual Faculty Listing Report. As part of an on-going process for sharing information with OSD reference the credentials of the USU faculty, the USU Vice President for Administration and Management coordinates and publishes a comprehensive Annual Faculty Listing Report. During November of each year, all full-time faculty members (***329 full-time USU faculty during 2004 - 208 civilians; 121 uniformed officers***) are counted in the totals of the Department where each holds his or her primary faculty appointment. Although it only captures a point in time, this annual report documents the unique and wide-reaching, collaborative relationships of the University with its off-campus faculty (***3,999 off-campus faculty during 2004 - 1,583 civilians; 2,416 uniformed officers***). Since the initial report completed in 1998, recommendations from the USU community have been incorporated so

that the following information is included within the annual report: 1) totals of full-time faculty (civilian and uniformed faculty members are identified by name); 2) the tabulation of academic titles, in accordance with USU Instruction 1100; 3) totals of part-time faculty (identified by name); 4) totals of off-campus faculty (civilian and uniformed off-campus faculty are identified and totaled by academic titles); and, 5) totals of civilian faculty with tenure or with tenure pending are identified by name. All of this information is broken out by Department or Activity; data are then combined and totaled for the School of Medicine or the Graduate School of Nursing; then, all totals are combined to form an inclusive summary for the University. A copy of the 2004 Annual Faculty Listing Report was provided on November 15, 2004, to the USU President, Deans, Department Chairs, Activity Heads, the USU Board of Regents (to include the Assistant Secretary of Defense for Health Affairs), and the USU Executive Committee (the Surgeons General and their staffs).

Two Significant OSD Awards Recognize the Multiple Products of USU. *The OSD Joint Meritorious Unit Award Recognizes the Multiple Products of USU.* On December 11, 2000, the Secretary of Defense awarded the Joint Meritorious Unit Award to the University. ***This significant award documents OSD's recognition of the essential mission, exceptional service over the past decade, and the multiple cost-effective programs of USU*** (the SOM, the GSN, Graduate Education Programs, Graduate Medical Education, Continuing Education for Health Professionals, the Military Training Network, Clinical Support for the MTFs, etc.). Public Law 92-426, *the Uniformed Services Health Professions Revitalization Act of 1972*, mandated that the University should meet the special needs of the Military Health System (MHS) through the provision of uniquely trained, career physician officers who would ensure continuity and leadership for the MHS. As validated by the Secretary of Defense in the citation for the Joint Meritorious Unit Award, the University has exceeded the goals set by the early visionaries who established USU.

On August 2, 2004, ***the prestigious DoD Medal for Distinguished Civilian Service*** was presented to the USU President on behalf of the Secretary of Defense. The DoD Medal for Distinguished Civilian Service is presented quite rarely by the Secretary of Defense and reflects significant recognition for the entire University. As with the Joint Meritorious Unit Award, ***the DoD Medal for Distinguished Civilian Service recognized the multiple products of USU and the cost avoidance generated for DoD by USU*** through the provision of Clinical and Consultative Support in the Military Treatment Facilities, the USU Office of Continuing Education for Health Professionals, the Military Training Network, and the USU Graduate Education Programs.

In addition to the Multiple Products and Services of USU, Four USU Programs Generated 33.6 Million Dollars of Cost-Avoidance, during 2004, for the Military Health System. Critical to the University's efforts for optimization, the Middle States Association of Colleges and Schools Commission on Higher Education has granted accreditation to USU, from 1984 through 2013. This essential accreditation, with commendation, has enabled the University to support and generate cost avoidance for the MHS through its multiple educational programs, all of which are accredited by a total of thirteen independent accrediting entities, in addition to the Middle States Commission on Higher Education. In meeting the mandates of its establishing legislation and the standards for accreditation as an academic institution, ***USU provides multiple services and products for the Military Health System (MHS), all of which are recognized by the Office of the Secretary of Defense.***

The Alumni of the USU School of Medicine. (*Stated totals are effective through April of 2005.*) The principal product of USU continues to be its 3,587 USU SOM uniquely trained, career-oriented physicians who are prepared to practice military medicine in the multi-Service environment of USU; and, as a result, USU ensures continuity and leadership for the MHS; ***the 2,607 USU SOM alumni on active duty in the Armed Forces represent 22.7 percent of the 11,495 physicians on active duty in the MHS*** (the Army has a total of 4,140 physicians on active duty, of which, 1,035 are USU graduates; the Navy has a total of 3,855 physicians, of which, 780 are USU graduates; and, the Air Force has a total of 3,500 physicians, of which, 792 are USU graduates). In addition, 88 USU SOM alumni continue to serve on active duty in the United States Public Health Service, for a total of 2,695 USU SOM alumni who continue to serve their Nation in the Uniformed Services. The USU SOM graduates average over 20 years of active duty service. Overall the median length of non-obligated service for physician specialists in the MHS averages only 4.4 years. That average drops to 2.9 years when USU graduates are excluded; ***the median length of non-obligated service as a specialist for USU graduates is 9 years (or three times longer than the other physician accession sources).***

The Graduate School of Nursing. *As of April 2005*, the fully accredited USU Graduate School of Nursing (GSN) has provided 231 Masters of Science in Nursing Degrees to advanced practice nurse graduates through its MSN Program options: the Family Nurse Practitioner option has 103 graduates; the Certified Registered Nurse Anesthesia has 121 graduates; and, the GSN Master Completion option has had a total of 7 graduates. Over 80 percent of the GSN graduates remain on active duty. ***As of April 2005, all 231 GSN graduates have passed their certification examinations with greater than a 97 percent pass rate on the first attempt***; during 2002, at the request of the Federal Nursing Chiefs, the GSN developed and received approval, from the USU Executive Committee and the USU Board of Regents, to implement a Doctoral Degree Program in Nursing and a Perioperative Clinical Nurse Specialist (CNS) option in the MSN Degree Program; students matriculated into both programs, during 2003. The CNS option projects to graduate its Charter Class of eight students, during the May 2005 graduation.

Clinical Services Provided by USU/SOM/GSN on-site Faculty. In 2004, during their course of teaching, 144 USU faculty members (92 uniformed; 52 civilians) provided over 147,301 hours of clinical care at the Army, Navy, and Air Force Medical Treatment Facilities (MTFs) in the National Capital Area. ***As reported in the 2004 USU Cost Avoidance Fact Sheet, the annual, manpower cost avoidance generated by the USU faculty through this clinical support (147,301 hours) was conservatively estimated at \$16,094,907.***

The SOM Graduate Education Programs. *As of April 2005*, the SOM Graduate Degree Programs have conferred a total of 845 Advanced Degrees: 251 Doctors of Philosophy; 15 Doctors of Public Health; 82 Masters of Science; 457 Masters of Public Health; 8 Masters of Science in Public Health; 28 Masters of Tropical Medicine & Hygiene; and, 4 Masters of Military Medical History. ***The annual cost avoidance generated by the USU SOM Graduate Education Programs for the MHS, as reported in the 2004 USU Cost Avoidance Fact Sheet, through the conferring of advanced degrees upon 38 uniformed officers (34 Masters Degrees and 4 Doctoral Degrees), was estimated at \$1,340,000.***

The USU Office of Continuing Education for Health Professionals and the Military Training Network. The USU Office of Continuing Education for Health Professionals (CHE), to include the Military Training Network (MTN), provides significant, cost-effective support for the MHS by facilitating

the continued professional growth of health care professionals, throughout the MHS. *As reported in the 2004 USU Cost Avoidance Fact Sheet, because CHE and MTN bring training to the military health care providers, an annual, estimated cost-avoidance of \$16,141,986 was generated, during 2004, for the MHS.*

The SOM Office of Graduate Medical Education. *The USU Office of Graduate Medical Education (GME) provides cost-effective support for the MHS in that it: serves as the Administrative Office and provides oversight for the National Capital Consortium (NCC); collects and evaluates data on DoD GME programs to ensure academic and scientific excellence; and, provides consultation and advice for the Dean of the SOM, the President of USU, and others on military-unique medical curricula.* During 2004, all of the 65 GME programs in the National Capital Area were under the sponsorship of the NCC.

USU Serves as the Academic Center for the MHS. During 2004, USU continued to serve as the Academic Center for academic and research activities for 2,416 active-duty, off-campus USU faculty located throughout the MHS; USU on-site faculty have sponsored, hosted, or participated in the major conferences held by the MHS; in addition, military relevant consultation is continuously provided to the MHS and other Federal agencies by the internationally recognized experts within the University's multiple centers, departments, programs, and institutes. As addressed in this Section of the Journal, *the military-relevant research conducted at USU, in collaboration with many hundreds of off-campus USU faculty assigned throughout the MHS, addresses critical issues for the Armed Forces.* The knowledge documented by the on-site and off-site USU faculty through their collaborative research is opening new avenues to: enhance the quality of clinical care; and, better control, diagnose, protect, and provide treatment for millions of MHS beneficiaries.

(All of these products and services are resourced as part of the operating cost of the University and are discussed and documented throughout the USU Journal.)

Three Independent Reports by the Center for Navy Analysis on Retention and Cost-Effectiveness Recognize the Critical Requirement for USU SOM Graduates. An example of the critical role of USU SOM graduates in the MHS was reported, during February of 2001, when the Center for Navy Analysis (CNA) provided data on medical retention to the Navy Surgeon General for use in his response to the Senate Appropriations Committee. The Navy Surgeon General informed the Congressional Committee that his most undermanned specialties were general surgery and all surgical subspecialties, orthopedic surgery, diagnostic radiology, anesthesiology, and urology. Many of these specialties are critical wartime specialties and shortfalls could have a negative impact on medical readiness. The Navy response stated the following... *Overall, the median length of non-obligated service for physician specialists averages only 4.4 years. That average drops to 2.9 years when USU graduates are excluded; the median length of non-obligated service as a specialist for USU graduates is 9 years.*

In April of 2003, CNA released *Phase II: The Impact of Constraints and Policies on the Optimal-Mix-of-Accession Model* from its major study, *Life-Cycle Costs of Selected Uniformed Health Professions.* The second of six major CNA findings states... *Policy-makers need to consider the costs and benefits*

for each accession source. For example, even though USUHS accessions are the most costly (when including all Federal costs, a 1995 General Accounting Report (GAO) found that USU and HPSP Scholarship graduates are comparable in cost), their better retention makes USUHS the most cost-effective accession source for filling 0-6 grade requirements in the MHS. Thus the outstanding retention rates of USU SOM graduates ensure that critical wartime specialties are filled; medical readiness requires the continuity and leadership provided by the USU SOM alumni.

On March 15, 2005, CNA reported to the Assistant Secretary of Defense, Health Affairs, in *Life-Cycle-Cost Model Excursions Related to USUHS*, that when they used a model “*with no USUHS accessions and the same experience minimum requirements as the baseline, the model brings in an excess of 2,919 HPSP physicians in an attempt to fill the seniority requirements. Obviously, this is not feasible in execution, but it demonstrates the difficulty of filling seniority requirements without an accession source like USUHS.*” CNA estimates that it would require at least 895 additional HPSP accessions annually to replace the current 165 USUHS graduates. This is not feasible in today’s environment for medical school applicants; currently, there is only one applicant for each HPSP slot. Without a doubt, the continuity and leadership provided by the USU SOM alumni cost-effectively ensure medical readiness and the preservation of lessons learned for the MHS.

Summary. The strengthened relationship of the University with OSD and OSD’s recognition of the numerous cost-effective programs of USU is documented by the following:

1) The OSD surveys of 1997 and 1998, which officially recognize the multiple products, academic certification, and faculty credentials of USU;

2) the awarding of the Joint Meritorious Unit Award and the DoD Medal for Distinguished Civilian Service by the Secretary of Defense; both awards specifically recognize the multiple, cost-effective programs of USU;

3) the cost-avoidance generated by the University for DoD, during 2004 (estimated at \$33.6 million); and,

4) the three independent reports by the Center for Navy Analysis (CNA), which document both the outstanding retention rates of the USU SOM graduates and the resulting cost-effectiveness of utilizing USU alumni to fill leadership positions, throughout the MHS.

ACADEMIC CENTER FOR THE MILITARY HEALTH SYSTEM

Research conducted at USUHS was recognized in Science as one of the top ten scientific breakthroughs of 2002. In 2003, the University received the maximum term of ten years of accreditation with commendation from the Middle States Commission on Higher Education. Today, the USUHS School of Medicine Graduate Education Programs in Public Health rank sixth in the Nation according to U.S. News & World Report's 2004 Rankings of America's Best Graduate Schools on the list of the top 10 community health master or doctoral programs (since this tribute, USUHS has received the same rating in the 2005 and 2006 Rankings of America's Best Graduate Schools). The American Medical Association has recognized that USUHS not only educates its own graduates, but also provides a significant national service through its continuing medical education courses for military physicians in combat casualty care, tropical medicine, combat stress, disaster medicine, and medical responses to terrorism, courses not available through civilian medical schools. Significantly, the Emerging Infectious Diseases Graduate Education Program provides courses on the agents and effects of bioterrorism and is the only graduate program in the Nation to offer formal training in these critical areas. *Over the past 13 years, USUHS has gained recognition and evolved into the Academic Center for Military Medicine.*

- The Honorable Daniel K. Inouye, United States Senator, *Tribute to James A. Zimble, M.D., Congressional Record*, July 6, 2004, page S7575.

Active-Duty, Off-Campus USU Faculty Total 2,416. Multiple USU academic and research activities contribute to the medical knowledge and technology base available to the MHS. During 2004, 2,416 active-duty, off-campus USU faculty members, throughout the MHS, collaborated with the University through academic and research efforts. *Through these collaborative efforts, USU serves as the Academic Center for those military medical officers and health care providers who seek to advance their military careers and their knowledge of uniformed health care.* For their valuable service to the University, these active duty, off-campus faculty members are awarded appropriate academic rank. **This section provides selected examples of military relevant conferences or academic activities sponsored by, or collaborated with, the University; all of which document why USU is serving as the Academic Center for Military Medicine.**

Activities of The Center for the Study of Traumatic Stress, USU SOM Department of Psychiatry. The USU SOM Center for the Study of Traumatic Stress, CSTS, established in 1987, is continuously sought out, both nationally and internationally, for its consultative, educational, and research capabilities in the area of traumatic stress. Ten major projects were funded, during 2004, with over seven million dollars, from the following sources: 1) the Department of the Army; 2) the National Institute of Mental Health; 3) the National Alliance for Research on Schizophrenia and Depression; 4) the National Alliance for the Mentally Ill Research Institute; 5) the National Institute on Drug Abuse; 6) the Substance Abuse and Mental Health Services Administration of the Department of Health and Human Services; 7) the Stanley Foundation; and, 8) the United States Marine Corps. During the past year, the CSTS continued to conduct research on the neurobiology of traumatic stress and the psychological and behavioral responses

to such events as the on-going war in Iraq and natural disasters, to include the Tsunami of December 2004 and recent hurricanes. Of significant note, the Director of the CSTS, **Robert J. Ursano, M.D., Professor and Chair, USU SOM Department of Psychiatry, Director, USU Center for the Study of Traumatic Stress**, served on the Institute of Medicine Committee on Responding to the Psychological Consequences of Terrorism. *His military unique expertise was instrumental in developing and advancing a national strategy that integrates mental health into a public health paradigm for terrorism management and response.* This new model is of substantial consequence as it demonstrates how *disaster psychiatry*, a singular specialty significantly contributed to by the forging of military medicine and USU faculty health care leaders in the 1980's, has become recognized, valued and regarded as an integral component for strengthening homeland security in this Century. The Committee's recommendations have been published in Preparing for the Psychological Consequences of Terrorism: A Public Health Strategy, the National Academies Press, Washington, D.C., 2003.

Practice Guidelines Developed for the American Psychiatric Association. The CSTS Director also chaired the American Psychiatric Association (APA) Work Group on Acute Stress Disorder and Post Traumatic Stress, which published the 13th APA practice guideline, *Practice Guideline for the Treatment of Patients with Acute Stress Disorder and Posttraumatic Stress Disorder*, in November of 2004. With the present concerns of the Nation over terrorism and the need for all clinicians to be able to help those who experience the ravages of a motor vehicle accident, a rape, or a war, this guideline can assure practitioners that they are using the best possible treatment for their patients.

Just-In-Time Training for Tsunami Responders. Recognition of the stature of the CSTS also occurred during the international response to the Tsunami Disaster, in January of 2005. *The CSTS offered Just-in-Time Training to field workers and teams deploying on a variety of missions including the Center for Disease Control's Morgue Mission in support of body recovery following the Tsunami Disaster.* In February of 2005, the CSTS also trained health care providers and scientists volunteering for PROJECT HOPE on the *UNS MERCY*, a 1,000-bed hospital ship traveling to the Tsunami-impacted nations. The CSTS team of scientists produced valuable *Fact Sheets*, which were posted on the CSTS website for worldwide dissemination. A *Push-Pack* of educational materials was written and assembled in response to the Tsunami, which included up-to-date information on the health risks of body recovery, mitigation of psychological stressors for body handlers, grief leadership, and the unique circumstances of missing and unrecovered remains for family and loved ones, to include complicated bereavement. *These definitive information and practical knowledge resources were provided to psychiatrists and mental health workers in Sri Lanka, Norwegian and Scandinavian Government Teams working with families whose relatives were dead or missing, Australian Trauma Teams, and international academicians in the field of trauma and disaster.*

Consultation for Medical Providers of Prisoners of War. Throughout 2004, **Lieutenant Colonel David M. Benedek, MC, USA, Associate Professor, USU SOM Department of Psychiatry, CSTS Scientist, and Colonel Elspeth Cameron Ritchie, MC, USA, CSTS Military Disaster Psychiatry Fellow**, provided *on-the-ground* consultation to Mental Health Assessment Teams (MHAT) deployed to Iraq. At the request of the Surgeon General of the Army, in September of 2004, LTC Benedek travelled to Iraq to *provide recommendations for medical and mental health care for persons detained by the United States in the Global War on Terror.* In addition to specific recommendations for medical and mental health treatment and staffing in military detention facilities, *his efforts strengthened a consultative relationship between medical personnel in the combat theater and psychiatric consultants at USU.* He also participated

in efforts to enhance the Ethics Training Program for troops preparing to deploy as medical providers for Prisoners of War and other detainees.

A Workshop on War Psychiatry Today. On July 12-13, 2004, CSTS faculty led by **Colonel Molly J. Hall, USAF, MC, Associate Professor, USU SOM Department of Psychiatry**, and **Carol S. Fullerton, Ph.D., Research Professor, USU SOM Department of Psychiatry**, convened a workshop on *War Psychiatry Today: From the Battlefield to the Homefront (Lessons from Operation Enduring Freedom and Operation Iraqi Freedom)*. The workshop examined the experience and preparation of military physicians for combat support in the Global War on Terror. Workshop goals were to identify gaps in current medical training in order to: 1) better prepare physicians to provide appropriate mental health care in light of the complexities posed by modern warfare; 2) understand the new challenges that modern warfare places on psychiatrists at all levels of care, from the combat zone through the return to the United States; and, 3) define needs for mental health support in the rehabilitation and reintegration of the wounded back into their units and society. ***Twenty-one distinguished speakers from the uniformed and civilian health care communities presented during the two-day workshop; attendees represented 49 uniformed and civilian health-related organizations*** to include: the Offices of the Surgeons General; the Walter Reed Army Medical Center; Wright Patterson Air Force Base; the Executive Director, TRICARE - Europe; the University of Oslo, Norway; the VA Pudget Sound Health Care System; the United States Department of Veterans Affairs; Health Affairs; the Pentagon DiLorenzo TRICARE Health Clinic; Tripler Army Medical Center; Wilford Hall USAF Medical Center; and, the Blanchfield Army Community Hospital, in Kentucky. The conference was attended by consultants to the Surgeons General, operational experts, and those who had recently returned from deployment, in Iraq and Afghanistan. The resulting recommendations provide a clear road map for psychiatric educators of military and combat psychiatry for medical school and postgraduate training, to include residency, fellowship, and continuing education. CSTS has already begun to implement these recommendations, both at the USU SOM and its residency program, as part of its work with the Services to meet doctrine and continuing education requirements. ***This educational activity reflects CSTS' on-going commitment to training future medical officers who will lead the Uniformed Services Medical Corps and care for those in harm's way, in accordance with the USU mission and strategic plan.***

CSTS Electronic Health Promotion Campaign Featured by the National Media. USU's electronic health promotion campaign, ***Courage to Care***, located at <www.usuhs.mil/psy/courage.html>, was launched, during 2004. This health information campaign was developed by USU military health experts: **Captain Derrick A. Hamaoka, USAF, MC, Instructor, USU SOM Department of Psychiatry**; **Lieutenant Colonel David M. Benedek, MC, USA, USU SOM Department of Psychiatry**; **Colonel Molly J. Hall, USAF, MC, Associate Professor, USU SOM Department of Psychiatry**; **James E. McCarroll, Ph.D., Research Professor**; and, **Ms. Nancy Vineburgh, Director, CSTS Office of Public Education and Preparedness**. The campaign serves the Nation's Active Duty, Guard and Reserve Components, their families, and health care professionals serving the military community and the Nation. Fact sheets, which include such topics as ***Reintegration: Becoming a Couple Again***; ***Caring for Children During Flu Season***; and, ***Psychological First Aid: Helping Victims in the Immediate Aftermath of a Disaster***, were electronically published and distributed throughout the Department of Defense and civilian academic centers. The program's timely, relevant, attractively packaged information has been recognized and widely applauded at all levels, from senior commanding officers to the spouses of junior enlisted service members. The program has also been widely featured in the national media. (See Section II, RESEARCH CENTERS AND PROGRAMS and STRATEGIC GOALS in Section I, for additional contributions of the CSTS, during 2004.)

Activities of the Center for Disaster and Humanitarian Assistance Medicine (CDHAM), USU School of Medicine, Department of Military and Emergency Medicine. The mission of CDHAM is to advance the understanding and delivery of disaster medical care and humanitarian assistance on a worldwide basis. Uniquely positioned as an academic center within the USU, CDHAM has served as a focal point in the Military Health System (MHS) to: *1) develop relationships between various governmental, non-governmental (NGOs), and private volunteer organizations (PVOs); 2) assist in the critical management of relief efforts in the medical response to weapons of mass destruction (WMD), terrorism, natural disasters, and humanitarian assistance contingencies through new developments in the areas of disaster and humanitarian assistance medicine (i.e., training in ultrasound imaging for disaster needs and assessment); and, 3) augment the training of military medical officers through specialized expertise, consultation, training in the field of telemedicine, and medical informatics in relation to the austere environment, education, and research capabilities. CDHAM uses training, technology, and best management practices to improve military medical capabilities and readiness, during disaster and humanitarian contingencies, especially through collaboration with the inter-agency process, the international medical community, and the host nation medical infrastructure and beneficiary populations.* CDHAM works closely with the Unified Combatant Commanders to meet its primary mission. In conducting studies and operations concerning local and global relief efforts, the CDHAM also works to expand relationships with other United States government agencies such as the United States Agency for International Development and the Office of Foreign Disaster Assistance, as well as international organizations such as the Pan American Health Organization/World Health Organization, and umbrella Non-Governmental Organizations, to include INTERACTION. **Kevin S. Yeskey, M.D., Associate Professor, USU SOM Department of Military and Emergency Medicine,** serves as the Director of CDHAM.

After Action Reporting System. Studies and Evaluation funding is utilized by CDHAM to advance defined, specific methodologies in operational humanitarian assistance/disaster response settings and to permit the continued organization and access of information obtained from such activities. *CDHAM's After Action Reporting (AAR) Project stems from a study published for the Assistant Secretary of Defense, Special Operations for Low-Intensity Conflict, to evaluate measures of effectiveness for humanitarian assistance and disaster relief activities.* While most organizations require some type of after action reporting, procedures to collect the information are not standardized. Also, retrieving reports is routinely complicated by problems in identifying the office primarily responsible for, or the location of, archived reports. To address these, and other shortfalls, CDHAM held discussions with software developers and had follow-on conferences to evaluate the means to better define the deliverable. CDHAM identified a software platform and established the necessary fields/elements for the system. The next phase of the project will be to develop the AAR software and pilot a validation study of the process(es). *CDHAM will fund the start-up costs and invite Service participation in the utilization of the AAR system.* As reports are posted, an analysis will be conducted by CDHAM to compare the system to existing report methodologies. It is anticipated that there are numerous potential end-users in the civilian and uniformed humanitarian assistance/disaster response (HA/DR) communities. The need to measure and improve the effectiveness of humanitarian assistance programs is widely recognized by the Unified Combatant Commands, therefore, multiple potential partners exist, both within DoD and in the larger HA/DR communities. The technical requirements for the system include standard, commercial, off-the-shelf software, hardware, and store and forward methodologies. For future applications, CDHAM intends to determine the applicability of the system for implementation into hand-held platforms being developed across other projects.

Educational Development - Military Medical Humanitarian Assistance Courses. Of ten Military Medical Humanitarian Assistance Courses (MMHAC) initially developed by CDHAM, six are in final

preparation for conversion into web-based programs. The content of the courses is being updated from lesson plans originally developed, during 2001-2002. While the definitions and the military's view of complex emergencies have not changed much concerning basic dialog, the execution and response by the DoD has continued to evolve. The introductory lectures of many of the courses of instruction are being reevaluated in accordance with current language and policies. From available materials, six courses are considered ready for web-based conversion; these were ranked using the following prerequisites: immediate availability for HTML conversion for web presentation; availability of materials, including electronic copies of reference materials and examinations; current application to disaster management; and, organization and structure of the course material. Beta test versions of courses ready for piloting via CDHAM's homepage on the World-Wide-Web are being finalized and just-in-time instructional curricula will soon be available for utilization by DoD commands and other first responder activities.

Quality Assured Training for First Responders. In February of 2005, the USU Centers for Humanitarian and Assistance Medicine (CDHAM) and the Study of Traumatic Stress (CSTS) received \$1.5 million from the United States Congress to implement ***a collaborative initiative for the sharing of quality assured training in the medical response to weapons of mass destruction (WMD) with the uniformed and civilian Emergency Responder and Health Care Provider Communities across the Nation, via the Internet.*** This collaborative initiative will assist in the preparedness for, and recognition of, a WMD incident; it will be a multi-disciplinary, interactive, quality assured, and tiered program leading to the awarding of continuing medical education (CME) credits, continuing nursing education (CE) units, and certificates of completion. The program is designed to reach a broad spectrum of uniformed and civilian students within the health care community, Federal health care responders, and others in the medical response community. The four primary disciplines include (but are not limited to) physicians, nurses, administrators (health care executives, emergency managers, city/county managers, etc.), and pre-hospital staff (law enforcement, emergency medical technicians, fire, hazmat, etc.). The program will be open to the public, free of charge, and available for anyone interested in enrolling. *Collaborative relationships have been developed over the past two years and subject matter experts identified with the United States Northern Command (NORTHCOM), the Reserve Components, the Department of Veterans Affairs (VA), the Office of the Secretary of Defense (OSD), the United States Public Health Service (USPHS), the Center for Disease Control and Prevention (CDC), and the Association of Academic Health Centers.* ***The technology is being developed to capture/break out totals for: 1) uniformed or civilian recipients of the training; 2) the primary disciplines of the students; 3) completed training by states and districts; 4) organizations represented; 5) CME/CE credits, units and certificates issued by discipline; and, 6) customer satisfaction information. This data will be used to determine the cost avoidance generated for DoD and will be made available to organizations, as appropriate. CDHAM expects to launch the program in early 2006. (See Section II, RESEARCH CENTERS AND PROGRAMS, CDHAM, for further information on this initiative.)***

The Interdisciplinary Graduate Program in Emerging Infectious Diseases. This interdisciplinary Ph.D. training program is designed primarily for individuals who wish to devote their graduate training to the study of the pathogenesis, host response, and epidemiology of infectious diseases. ***The mission of the Emerging Infectious Diseases (EID) Graduate Program is to provide the scientific community with broadly-trained, outstanding scientists who can contribute significantly to the increasingly complex field of infectious disease mechanisms and pathogenesis.*** The importance of accomplishing these educational goals, in the area of EID research, cannot be underestimated given the increasing threats of bioterrorism and the risks associated with emerging and re-emerging infectious diseases. ***As part of the EID Program,***

courses on the agents and effects of bioterrorism are offered. To date, this program is one of the only graduate programs in the Nation to offer formal training in this critical area. Nine uniformed and civilian students entered the program, in August of 2004. (See Section IV, GRADUATE EDUCATION PROGRAMS, for further detail on this one-of-a-kind program.)

The Center for Prostate Disease Research, USU SOM Department of Surgery - A TriService Effort.

Researchers led by Dr. Shiv Srivastava from the Center for Prostate Disease Research (CPDR), Uniformed Services University of the Health Sciences (USU), report the groundbreaking discovery of the ETS-Related Gene (ERG) as one of the frequent proto-oncogene overexpressions in prostate cancer cells. This discovery provides a very promising addition to a select group of genes, whose expression is frequently altered in prostate cancer cells and could provide novel molecular targets for diagnosis, prognosis or therapy of prostate cancer in the future... This discovery was the result of a highly coordinated effort by urologists, pathologists and cancer biologists from Walter Reed Army Medical Center (WRAMC), USU, the Armed Forces Institute of Pathology (AFIP), the Walter Reed Institute of Research (WRAIR), and the National Human Genome Research Institute (NHGRI).

- *Promising Lead in Prostate Cancer Diagnosis, New Discovery, Medical News Today, June 11, 2005.*

Background. The Center for Prostate Disease Research (CPDR) is a United States Department of Defense multi-site Program with major sites in Washington, D.C., and in the cities of Bethesda and Rockville, Maryland. *The CPDR is dynamic in that it integrates basic and clinical science programs and continues to make significant progress in developing promising detection techniques and treatments for prostate cancer and disease.* The CPDR is a USU Program; it is affiliated with the Walter Reed Army Medical Center (WRAMC) and the Armed Forces Institute of Pathology (AFIP), both located in Washington, D.C., as well as *nine, TriService (Army, Navy and Air Force) Military Medical Centers* located throughout the United States. The CPDR is administered by the Henry M. Jackson Foundation for the Advancement of Military Medicine.

Mission. *The CPDR integrates a multi-disciplinary approach to prostate cancer and continues to make great strides in clinical and basic science research for improving the diagnosis, treatment and management of prostate cancer patients.* The Center's strategy is to focus investigators on potential breakthrough research leading to translational, cutting-edge technologies within the three major research programs (*Basic Science, Clinical, and Database*) while maintaining the core support requirements for all of its programs. **Colonel David G. McLeod, MC, USA, Urologic Oncologist, Walter Reed Army Medical Center, Professor, USU SOM Department of Surgery,** continues to serve as the Director of the Center for Prostate Disease Research; Colonel McLeod, following a national search, fills the endowed Clinical Chair Position. The CPDR Basic Science Research Program is led by **Shiv Srivastava, Ph.D., CPDR Co-Director and Scientific Director, Professor, USU SOM Department of Surgery;** following a national search, Dr. Srivastava fills the Judd Moul Molecular Surgeon Basic Science Chair, an endowed

chair position. The CPDR actively participates in the training and education of Post-Doctoral Fellows and Urology Residents. During 2004, ten Post-Doctoral Fellows and two Urology Residents were in training in multi-disciplinary prostate cancer research at the CPDR. The same number is projected for 2005. The CPDR also continues to sponsor one Ph.D. Graduate Student, two MHS Residents, three International Fellows, and six Summer Students.

Clinical Research Center Provided Medical and Clinical Trial Services to 4,637 Patients in 10,311 Appointments and Consultations During 2004. The CPDR Clinical Research Center (CRC) is located on Ward 56 at WRAMC; it provides state-of-the-art care to military beneficiary patients affected by prostate disease, with particular emphasis on enrolling military beneficiaries in clinical trials. The CPDR combines prostate screening, data collection, clinical diagnosis, education and counseling in a distinctly patient-oriented setting. ***During 2004, the CPDR-CRC rendered medical and clinical trial services to 4,637 patients in 10,311 appointments and consultations.*** This represents an increase over the 9,567 appointments and consultations on 4,019 patients, which took place during 2003. ***Service participation includes specialists and residents from Urologic Oncology, Radiation Therapy, Psychology, Patient Education, as well as research staff to ensure that all treatment options available to the patient are carefully explained. After the patients have met with all of the specialists, the group meets to discuss the individual cases presented and offers recommendations to the patients to assist them in their treatment decisions.*** In addition to providing a valuable service to DoD beneficiaries, the opportunity to collect more widely comprehensive data on their care and to expand the database in the areas of medical oncology and radiation therapy was realized. ***The WRAMC Clinical Research Center currently has over twenty clinical trials, which offer a number of very innovative clinical protocols not offered anywhere else in the Military Health System.*** A comprehensive CPDR tissue bank and serum bank have been developed from patients treated for prostate cancer and other prostatic diseases at the WRAMC Center.

Basic Science Research Program Receives High Recognition for Academic Activities. The CPDR Basic Science Research Program (BSRP), located at sites in Bethesda and Rockville, Maryland, continues to focus on cutting edge molecular and cell biology research, with a goal to better understand the biology of the disease and to develop novel diagnostic and prognostic biomarkers and targeted therapeutic strategies for the treatment of prostate cancer. The multi-disciplinary focus of the CPDR ensures integration of the CPDR-BSRP researchers with Urologists, GU-Pathologists, Epidemiologists, Biostatisticians, Medical Technologists, and experts in the areas of Bio- and Medical Informatics and Regulatory Affairs. In 2004, the CPDR-BSRP continued to produce peer-reviewed high quality papers in leading cancer research journals, including ***Oncogene, Clinical Cancer Research, the International Journal of Oncology, Anti-Cancer Research, Clinical Chemistry,*** and the ***Journal of Urology.*** Also during 2004, the CPDR-BSRP was awarded ***three peer-reviewed grants (NIH-RO1, NIH-UO1, subcontract, and DoD-PCRP Resource Development).*** And, ***one United States patent was issued for the CPDR discovery of the novel prostate specific gene, PCGEM1, and its potential prostate cancer biomarker.***

CPDR TriService Clinical Database. In 2004, significant improvements were made to CPDR's TriService clinical database. The revised Master Protocol was approved, by USU, on October 12, 2004. Subsequently, each participating military center has undergone the Institutional Review Board (IRB) process for approval. ***The 19,000+ patient database is the largest and most comprehensive longitudinal prostate cancer database in the United States.*** The overarching goals of the Master Protocol revision and database reorganization were to enhance compliance with the Health Insurance Portability and Accountability Act (HIPPA) regulations and to circumvent potential challenges to proper patient consent and data sharing

across participating clinical sites. As a key modification to previous standard practice, data will no longer be sent as raw data files to investigators; instead, only final analyses will be sent in a collapsed, tabulated form. Overall, the major restructuring to the clinical database and Master Protocol have set the stage for dramatic improvement to the data quality, security, and usability of the clinical database. As a remaining goal, linkage of clinical data to tissue and serum bio-specimen data will be required to effectively carry out translational research. (See Section II, *RESEARCH CENTERS AND PROGRAMS, CPDR, for further information on this Program.*)

11th Annual Faculty Senate Research Day, School of Medicine Graduate Student Colloquium, and the Graduate School of Nursing Research Colloquium - 2004. For the first time, the annual Faculty Senate Research Day and School of Medicine's Graduate Student Colloquium were formally joined with the Graduate School of Nursing Colloquium. Activities for all three events, held on the USU campus on May 12-13, 2004, centered on the theme *Operational Readiness: Research for Best Practices*. The two-day meeting brought nearly 300 individuals to the USU campus, including researchers from area affiliates such as the *National Naval Medical Center*, the *Walter Reed Army Medical Center*, the *Armed Forces Institute of Pathology*, the *National Institutes of Health*, *American University*, *Georgetown University*, *George Washington University*, the *Howard Hughes Medical Institute*, the *Washington Hospital Center*, and the *Centers for Disease Control and Prevention*, as well as other prominent government agencies, universities, and hospitals.

Both the School of Medicine's Graduate Student Colloquium and the Graduate School of Nursing's Research Colloquium were held on the USU campus on Wednesday, May 12th. As the culminating event that day, the USU President hosted a University-wide *President's Poster Session and Reception*, featuring ten posters selected for the quality of research, clinical and/or operational significance, and presentation. The 2004 Graduate Student Colloquium featured a career development workshop on job opportunities for graduate students; student poster and platform presentations; and, the annual *John W. Bullard Lecture*. The 2004 *Bullard Lecture, Transcription Factors and Cancer*, was presented by **James E. Darnell, Jr., M.D., Vincent Astor Professor at The Rockefeller University**. The Graduate Student Colloquium, established in 1980, promotes scholarly interchange between SOM graduate students and the academic community at USU, as well as the recognition of the research achievements of current SOM graduate students. The Graduate School of Nursing's Research Colloquium, now in its fifth year, consists of platform and poster presentations by students in the GSN. In 2004, GSN presentations were divided into three sessions: Operational Readiness; Clinical Decision-Making in the Federal Health Care System; and, Population Health & Outcomes. The all-day session culminated in an awards ceremony for the school, including research and teaching awards for both faculty and students.

The 11th Faculty Senate Research Day was held on Thursday, May 13, 2004. **Brigadier General Eric B. Schoomaker, M.D., Ph.D., MC, USA, Commanding General, Southwest Regional Medical Command and Eisenhower Army Medical Center, and Lead Agent for TRICARE Regions 3 and 15**, delivered the plenary lecture. BG Schoomaker's long association with USU includes an assignment as a USU faculty member in the Department of Medicine, in the 1990's. His talk, entitled, *Operational Readiness and USUHS: From Basic & Behavioral Science to Emerging Best Practices*, focused on the role that USU is particularly suited to play in conducting research that draws on a wide range of scientific results and has relevance for present needs across the Services. The Research Day program also included both poster sessions and the full range of clinical, basic science, behavioral, and public health research taking place at USU and panel discussions on topics such as: *Rehabilitation, Restoration of Function, and*

Return to Duty; All You Need to Know About Specimen Storage, Databases, & Future Use; Cancers in the Military Population; Deployment Experiences: Lessons Learned; Emerging and Re-Emerging Infectious Diseases; and, Mission-Based Proteomics.

ORGANIZATIONAL CULTURE

STEWARDSHIP: We will protect and enhance the human and physical resources of the University, optimize productivity, promote a sense of family and community, while emphasizing flexibility in response to changing world conditions.

- **USU Strategic Plan**, Goal 5, approved by the USU Board of Regents, in May of 2003.

Continuous Efforts to Ensure a Diverse Community that Is Powerful, Committed, and Energized. A common challenge for most educational institutions is the goal to recruit and retain highly qualified students, faculty, and staff. As USU works to achieve that goal, it must also strive to reflect the diversity that exists in both the Uniformed Services and our Nation. The five USU Offices of University Recruitment and Diversity (ORD), Student Affairs (OSA), Civilian Equal Employment Opportunity (EEO), Military Equal Opportunity (EO), and the Brigade Commander (BDE) collaborated with the Civilian Human Resources (CHR) Directorate, during 2004, to ensure that the University continued to promote respect, appreciation, and understanding throughout its multi-Service activities. During 2004, the University's emphasis was on encouraging cooperation, development, diversity, communication, and collegiality by: 1) the identification and encouragement of equal opportunity principles and diverse cultures through numerous university forums, individual counseling sessions, recruitment strategies, and community service activities; 2) the timely sharing of relevant information through continuing orientation programs, on-going USU publications, educational web sites, and advanced technology; and, 3) the provision of extensive development and recognition programs for the civilian and uniformed members of the USU family.

Communicating Equal Opportunity Principles and Appreciation of Diversity.

500 USU Personnel Participate in Two Community Events. During 2004, the USU Office of Equal Employment Opportunity (EEO), with the volunteered-support of the USU Special Emphasis Program Managers, continued to present USU Community Sessions to reinforce both the understanding of, and the appreciation for, the cultural diversity that exists throughout the University. Numerous events were conducted during the past year, to include two Special Emphasis Events. On February 12, 2004, **James L. Collins, Sr., M.D., Colonel, USA (Retired), Professor, USU SOM Department of Psychiatry**, presented the Keynote Address to 200 USU personnel for the Martin Luther King, Jr., Birthday Observance. And, on January 13, 2005, over 300 members of the USU community commemorated the life of Dr. Martin Luther King, Jr., by witnessing a dramatic, one-person presentation entitled, *Let Freedom Ring*, portrayed by **Brother Moses**; the event was a resounding success. In addition, visits were coordinated to the Holocaust Memorial Museum, in Washington, D.C.

Student Professional Activities. The coordinating efforts of the USU Office of Recruitment and Diversity (ORD) administratively support the following student groups: *the Asian Pacific American Medical Student Association* (APAMSA); *the American Medical Student Association* (AMSA); *Women in Medicine and Science* (WIMS); and, the *Student National Medical Association* (SNMA). During

2004, USU students were very active and continued to provide outstanding recruitment support to ORD. They visited local area schools to talk with elementary, middle, and high school students; and, they also attended their various regional and national meetings. ORD will continue to include selected members of these student groups in any new initiatives undertaken during the coming year. ***AMSA USU Chapter President, 1LT Josh Tyler, USAF, presented a resolution to formally recognize a Military Medical Interest Group at the AMSA National Meeting, held in March of 2005. The resolution passed by a large majority, enabling medical students enrolled in military scholarship programs and USU a voice in the largest medical student association in the United States.*** USU was also recognized by AMSA as the fastest growing chapter for 2004, thanks to the efforts of **2LT Josh Tyler, USAF, and 2LT Geoffrey Chin, USA.** Six students, **Lieutenant Commander Ron Jones, USN, USU Navy Company Commander, and CAPT Cynthia Macri, MC, USN, Vice President, ORD,** attended the Annual Convention of the Student National Medical Association, held in New Orleans. And, WIMS and APAMSA successfully supported two outreach initiatives at the Wheaton High School and the Stone Ridge School of the Sacred Heart, during 2004.

Provision of Formal and Informal Counseling. The USU Offices of Equal Employment Opportunity (EEO), Equal Opportunity (EO), Recruitment and Diversity (ORD), and Student Affairs (OSA) continued to provide formal and informal counseling, throughout the Year 2004. The EO Office (military) did not have to provide formal counseling sessions to the uniformed members of USU, during 2004; the EEO Office (civilian) provided eleven informal counseling sessions to the USU civilian staff, during the past year. Beginning in September, OSA conducted well over 300 formal interview and counseling sessions for the first and third-year medical students; in addition, ORD also continued to provide individual counseling sessions for numerous uniformed students. The success of these counseling sessions is evidenced by the ever-increasing appreciation and respect shared among the individual members of the University. In addition, the EO representatives for the USU Brigade provided EO training for all uniformed members of the University, during 2004; the training sessions addressed diversity, acceptance of others, management of difficult situations, and the identification of harassment in both the work place and in the academic setting.

Faculty Senate Outreach Program for Working Mothers. In response to recommendations of the USU faculty and the President of the Faculty Senate, the Office of Administration and Management coordinated the construction and establishment of a Mother's Lactation Room to assist working mothers, who wish to continue breast-feeding their babies after returning to work. The room provides for privacy and is equipped with appropriate furniture, electrical outlets, and a refrigerator for the storage of expressed milk. At the time of its establishment, during 2000, USU was the only DoD entity to provide such a facility. The program continued, throughout 2004.

USU Center for Health Disparities Research and Education. The USU SOM Departments of Medical and Clinical Psychology and Family Medicine were awarded a \$7 million grant from the National Institutes of Health (NIH) National Center on Minority Health and Health Disparities, to sponsor the USU Center for Health Disparities Research and Education, referred to as *Project EXPORT*. ***The Center's goal is to promote positive health-related change and ultimately eliminate disparities among racial and ethnic minorities through research, education, training, community outreach, and information dissemination.*** During 2004, the Center's Research Component sponsored four research projects, which utilized: networks outside of traditional settings to eliminate health disparities; weight management studies; health assessment surveys; and, cultural proficiency training to achieve the Center's goals. ***The Center's Education Component***

provided cultural sensitivity training for eight of the twelve Family Medicine Clerkship rotation sites at the various Army, Navy, and Air Force activities where USU medical students carry out their actual clerkships. The Community Outreach and Information Dissemination Component collaborated with multiple partners to solidify programs for high school students to tour USU and learn about careers in the health care field. Other partners worked with the Center to maximize the health care provider's encounter as a tool in reducing health disparities through its sponsorship of interactive workshops, presentations by improvisational actors, and the development of questionnaires. **Richard Tanenbaum, Ph.D., USU SOM Department of Medical and Clinical Psychology**, serves as the Principal Investigator. **David S. Krantz, Ph.D., Professor and Chair, USU SOM Department of Medical and Clinical Psychology**, is the Center Director; and, **Lori Dickerson-Odoms** is the Program Manager. (See *CURRICULUM RENEWAL and RESEARCH PROGRAMS AND CENTERS* in Section II of the Journal for further information on Project EXPORT.)

Timely Sharing of Information.

The USU Web Is Used to Provide Information Throughout the USU Community. During 2004, the Department of Biomedical Informatics (BID), under the direction of **A. Leon Moore, Ph.D., Professor and Chair, USU SOM Department of Biomedical Informatics**, continued to support the University's educational efforts through its Center for Informatics in Medicine (CIM). Today, CIM hosts over 100 educational web sites for the University; these sites serve on-site and distance learning students, residents, and faculty. Significantly, the Department continued its support for the USU PDA Initiative. Personal Digital Assistants (PDAs) have been issued to three classes of School of Medicine (SOM) and Graduate School of Nursing (GSN) students. The USU PDA Initiative was highlighted at the Symposium of the American Medical Informatics Association, in November of 2002, resulting in the publishing of a paper, *The USU Medical PDA Initiative: The PDA as an Educational Tool*, during 2003. BID continues to fulfill its responsibility for the Clinical WebLog <<http://cweblog.usuhs.mil/>>, which is used by USU SOM students to document experiences, during their clinical years. **CWebLog** is currently used by seven third-year clerkships with access via a web browser and the PDAs issued to the SOM and GSN students. With assistance from the SOM Preventive Medicine and Biometrics (PMB) faculty and the USU Learning and Resource Center (LRC) staff, during 2003, the BID established its second course, **BID-510, Introduction to the Department**, which organizes and teaches **MCB-501, Introduction to Computers for Bioinformatics Computer Skills**; this new course was implemented, during 2004. The Department also continues to support the establishment of a high performance research network at USU, **Internet2**. The BID connection to *Internet2* became operational through the National Library of Medicine and has hosted multiple demonstrations from its USU laboratories.

The 2003/4 Edition of the USU Journal. To ensure that information was shared with both internal and external customers, the *University published and distributed more than 800 copies of the 2003/4 Edition of the USU Journal, during 2004.* Each copy included a CD-ROM; and, all 329 USU faculty members received a copy of the Journal in CD-ROM format. *Each Edition of the USU Journal provides an inclusive background on the history and development of the University; it also describes the achievements of the past year and any changes, which may have taken place throughout USU's educational programs, centers, and institutes.* The Journal, sometimes referred to as *The USU Encyclopedia*, serves as a source document for the University's responses to congressional, executive, and general requests for information,

throughout each year. *This annual report, coordinated by the Vice President for Administration and Management with the University President and over 70 Activity Heads and Chairs, documents how relevance, readiness, and optimization are successfully emphasized throughout the University's programs and activities and assesses how the goals of the USU Strategic Plan have been met, during the past year.* Numerous letters of acknowledgement and accolades have been received by the University since its initial distribution; selected examples include: the USU Deans, Department Chairs, and Activity Heads; the Secretary of Defense, the Deputy Secretary of Defense; the Secretary of the Air Force; the Chairman of the Joint Chiefs of Staff; the Chief of Naval Operations; the Commandant of the Marine Corps; the Surgeon General of the United States Public Health Service; the American Medical Association; the Institute of Medicine; the Air Force Association; and, numerous Members of the Cabinet of the President of the United States.

USU Orientation Program. Since October of 2000 through 2004, the USU Civilian Human Resources Directorate, with the participation of the senior leadership at USU, has sponsored formal sessions of the USU Faculty and Staff Orientation Program for 535 in-coming civilian and uniformed members of the University community: 45 during 2000; 92 during two sessions held in 2001; 119 during three sessions held during 2002; 157 trained during 2003; and, 122 during 4 sessions held in 2004. *The purpose of this on-going program is to present the newly-appointed members of the USU community with the philosophy, goals, policies, and leadership principles of USU.* Orientation packets with key facts and other selected information, to include the CD-ROM for the current USU Journal, are provided for review and future reference. For example, the USU Office of Environmental Health and Occupational Safety (EHS) briefs the new employees on its initiatives to raise the safety consciousness of the USU researchers and the general community. In addition, since February of 2000, the SOM Office of Faculty Affairs has maintained a Faculty Handbook on the USU web site, which describes the organization and functions of the various components of the University; it serves as a quick guide for the delegation of responsibilities at the University and where to seek information, guidance, or other faculty-related requirements. New faculty members are introduced to the USU web site and encouraged to utilize the above-mentioned information. Since its establishment, the USU Orientation Program continues to successfully promote a positive experience for the new employees and allows them to meet the senior management of USU; orientation sessions are continuing, during 2005.

Personal Development and Retention.

Individual Recognition. Throughout 2004, the USU community worked to build and strengthen cooperation, integrity, trust, and collegiality, as well as, to reward individual members for their contributions. An on-going performance evaluation process, developed by the Civilian Human Resources Division (CHR) and the Brigade Command, ensures that each USU employee (civilian and uniformed) receives an annual rating and appropriate recognition for his/her accomplishments. During 2004, CHR continued its procedures for tracking individual employee's years of service. The University President personally presented service awards to designated employees at their work sites. The program has been well received; *to date, 236 civilian service awards have been presented. And, during 2004, the Office of Military Personnel approved, processed, and presented 71 awards for the USU military personnel:* 1 Joint Meritorious Unit Award (AFRRI); 2 Legion of Merit Awards; 34 Defense Meritorious Service Medals; 31

Joint Service Achievement Medals; 1 Army Commendation Medal; 1 Army Achievement Medal; and, 1 Military Outstanding Volunteer Service Medal.

Training Opportunities Provided to USU Employees. During 2004, the USU Offices of Civilian Human Resources (CHR), Medical Education (MEE), Faculty Affairs (ADF), Research Administration (REA), the Brigade Command (BDE), University Recruitment and Diversity (ORD), Equal Employment Opportunity (EEO), and Equal Opportunity (EO) provided programs and support to assist the University community in its self-development and training requirements. *Civilian Human Resources (CHR) sponsored the establishment of a University Toastmasters International Club, in 1999; active participation continued, during 2004, with 30 active members.* The *Executive Leadership, New Leader, and Aspiring Leader Programs have been on-going for some years*; four individuals were sponsored in these programs, during 2004. In addition, numerous training opportunities were provided by CHR to the USU civilian work force that were linked closely with the establishment and expansion of Individual Development Plans. *CHR used 165 training vouchers, during 2004, and 75 on-line subscriptions for computer-related training for the Microsoft Office Suite.* Through the use of vouchers, USU faculty and staff were provided opportunities to attend off-site computer classes through CompUSA or New Horizons. USU employees were also provided an on-line computer training option through *ElementK*, which allows the individual to complete training assignments, through the Internet, while at home or at work. *A total of 441 employees were trained on-site*, to include 70 attendees of the Ethics Training Classes, which were conducted by the Office of the USU General Counsel. On-Site Classes provided by CHR included: *Writing KSAs* (69 participants); *Stress & Anger Management* (27 participants); *Criticism & Discipline Skills for Supervisors* (32 participants); *Writing Federal Resumes* (32 participants); *Retirement Planning* (29 participants); *Supervisory Training* (30 participants); *Prevention of Sexual Harassment* (30 participants); and, *New Faculty & Staff Orientation* (122 participants).

USU Faculty Attend Development Courses and Seminars. During 2004, **Cindy C. Wilson, Ph.D., Professor, USU SOM Department of Family Medicine**, coordinated, on behalf of her department, with the SOM Offices of Faculty Affairs and Medical Education, to sponsor numerous courses and seminars, which strongly supported faculty development at the University. *During 2004, 195 attendees earned over 1,000 hours of continuing education.* The following are selected examples of the successful activities, during 2004, which led to the enhancement of the professional skills of the USU faculty members: **1) Everything You Wanted to Know About Congressionally Directed Research but Did Not Know Who to Ask;** **2) Accept, Revise, Reject: How to Review Educational Research Papers;** **3) Evidence-Based Medicine: From Research to Practice;** **4) Preparing a Lecture for Medical Students;** **5) Surgeon's Communication with Colleagues and Patients;** **6) A Community of Scholars: The Dialog Continued;** **7) Communication Skills in Clinical Care Settings;** **8) Observation, Experiment and the Changing Nature of Evidence-Based Medicine;** and, **9) Writing for Impact: Effective Writing for Public Health Practitioners.** Additional topics that were taught at USU's affiliated teaching sites included: **1) Advising Residents;** **2) Optimal Faculty Composition;** **3) Chief Resident's Roles and Keys to Success;** **4) Medical Students Evaluation and Feedback;** **5) Doing Research in Family Medicine/DoD;** and, **6) Hyperlipidemia.** In addition, *the Vice President for Research continued to conduct classes for the USU faculty on the submission of research proposals*, throughout 2004.

USU Health Center Tobacco Cessation Program. Established during 2002, and on-going during 2004, the USU Health Center Tobacco Cessation Program is a four-session program designed to help individuals to quit using tobacco products. Most individuals requesting tobacco cessation assistance are cigarette smokers; but, individuals who use smokeless tobacco (dip or chewing tobacco), pipes, cigars, etc., may enroll in the program. The lead for the USU Tobacco Cessation Program for uniformed personnel is **Major Nicole L. Frazer, Ph.D., USAF, BSC, Assistant Professor, USU SOM Department of Family Medicine, and Director, Clinical Health Psychology**; she can be reached at <nfrazer@usuhs.mil>.

The program is based on the guidelines established by the Agency for Health Care Policy and Research (*AHCPR; 1996*); the Clinical Practice Guideline for Treating Tobacco Use and Dependence (*United States Public Health Service; 2000*); and, the VHA/DoD Clinical Practice Guideline for Promotion of Tobacco Use Cessation in the Primary Care Setting (*2001*). The program consists of at least four sessions with the provider including the enrollment session, the quit date session, and two follow-up sessions. The program is a comprehensive behavioral treatment program, which involves behavior modification, stress management skills training, and the use of medications. Six weeks of nicotine replacement therapy involving the nicotine patch are available as part of the program for those participants who are medically qualified. Zyban (bupropion) is also available for eight weeks, beginning with the first enrollment session. Individuals must participate in the tobacco cessation program and attend the sessions to obtain the medications. Research indicates that these medications do not work unless combined with a comprehensive behavioral treatment program. A data base has been created so that all participants can be entered and tracked at three, six, and twelve months following their *quit date*. It is conservatively estimated that twelve individuals have quit smoking since November of 2002, when the program was initiated. Civilian employees at the University, who wish assistance with ending their use of tobacco products, may contact the University Environmental Health and Occupational Safety (EHS) staff at <asorrels@usuhs.mil>.

OSD Confirmation of USU Title 10 Authority. During Fiscal Years 1997 and 1998, there had been a one-year suspension on the inclusion of allowances in the calculation of retirement benefits for the USU Administratively Determined (AD) employees (faculty and staff) who are covered under TIAA-CREF, Fidelity, or any other retirement system not established under Title 5 U.S.C. This issue, which involved USU's Title 10 authority, was resolved with OSD through the coordinated efforts of the OSD Office of the Deputy Assistant Secretary for Civilian Personnel Policy, Washington Headquarters Services, the USU President, and the USU Vice President for Administration and Management. As a result, the inclusion of allowances in the calculation of benefits for USU AD employees was reinstated by OSD for Fiscal Year 1999 and has been continued through the present; current 2005, OSD-approved, AD salary schedules include footnote references that confirm the reinstatement of this benefit.

Legislative Language Removes the Limits of Executive Level IV for the Annual Rate of Basic Pay. Previously, the annual rate of basic pay for USU AD employees was limited to be no more than the rate set for Executive Level IV. In many cases, this limitation resulted in the need for allowances to bring the total pay up to the limits established by OSD in the USU salary schedules. During the last quarter of Fiscal Year 1998, and following extensive coordination by the Vice President for Administration and Management, the OSD Office of the General Counsel, at the request of the Deputy Assistant Secretary for Civilian Personnel Policy, recommended the legislative change contained in Section 1108 of the Conference Report for the National Defense Authorization Act for Fiscal Year 2000. As a result, when the Authorization Bill for Fiscal Year 2000 was signed, it effectively removed the limitations of Level IV for the USU AD employees;

as appropriate, the upper pay limits of the USU AD salary schedules are now limited to the rate set for Executive Level I. This has proven to be a valuable tool for the recruitment and retention of essential faculty and staff by the USU President and Deans. Implementation actions for the reduction of allowances were initiated and implemented, during 2000, by CHR and continued, as appropriate, during 2004, to the present.

USU Administratively Determined Salary Schedules Are Approved. Previously, the USU salary schedules for the Administratively Determined (AD) employees had remained the same from 1993 through 1997. To address this concern, *a Memorandum of Understanding*, coordinated by the USU Vice President for Administration and Management, and *signed by the OSD Office of Civilian Personnel Management Services (CPMS), the Navy Bureau of Medicine, and the USU President, successfully resulted in the implementation of annual comparability studies by CPMS.* These comparability studies, completed in coordination with the USU Civilian Human Resources Directorate and the USU Faculty Senate Comparability Committee, serve as a critical component in the on-going review, updating, and implementation process for the USU AD salary schedules. As an example of the implementation procedures, when the Principal Deputy Assistant Secretary of Defense (Force Management Policy) approved salary schedules for the USU AD employees on August 25, 1999, an increase in base pay was automatically provided for any AD employees whose base pay was lower than the minimum limits of the new salary scales; this process, based on currently approved salary schedules, has been continued to the present. Updated salary schedules have been continuously approved, since 1998, as follows: in July of each year, revised and OSD-approved salary schedules are effective and implemented based on current data and the CPMS comparability studies; then, in January of each year, the salary schedules are adjusted by CPMS to implement Executive Level I pay, as required. The salary schedules were updated, during January of 2005, to reflect the current pay status of Executive Level I.

University Recruitment and Diversity.

OBJECTIVE: USU will recruit, reward, and retain outstanding and diverse students, faculty, and staff.

- **USU Strategic Plan**, Goal 5, First Objective, Goal 5, Approved by the USU Board of Regents in May of 2003.

Office of University Recruitment and Diversity. The USU Office of Minority Affairs was established, in 1991, with a mission to increase the participation and advancement of traditionally underrepresented minority and women students, faculty, and staff at the University. The Office of Minority Affairs, under the initial leadership of **Jeannette E. South-Paul, Colonel, MC, USA, Vice President for Minority Affairs**, established numerous programs to especially increase the recruitment and retention of underrepresented minorities at the University. Following COL South-Paul's selection to serve as Chair, SOM Department of Family Medicine, **Charles W. Campbell, Jr., Colonel, USAF, MC, FS**, served as the second USU Vice President for Minority Affairs. In April of 1999, **Carolyn L. Miller, Lieutenant Colonel, USAF**,

BSC, was selected as the third USU Vice President for Minority Affairs. During 1999, following extensive discussions with the USU President and the Board of Regents, the University's Strategic Plan was modified to specifically address University recruitment and diversity. Subsequently, during 1999, the Office of Minority Affairs was renamed as the Office of University Recruitment and Minority Affairs; during 2000, strategy sessions to enhance the recruitment efforts of the University resulted in a decision to further modify the office title to the Office of Recruitment and Diversity (ORD). The USU Strategic Plan has continuously retained strategies for both marketing the University and targeting the increased recruitment of women and underrepresented minorities. The Office of Recruitment and Diversity (ORD) has remained committed to increasing the general public's awareness of the University; thus, ORD has continued to market the University and introduce military medicine, USU, and the United States Public Health Service to prospective applicants. By the end of 2001, the following areas were included among the numerous program responsibilities of ORD: on-going recruitment efforts; retention and student support activities; community service; and, the USU Post-Baccalaureate Program.

LtCol Miller departed the University for her next assignment on July 31, 2002; on September 26, 2002, the USU President announced his selection of **Cynthia I. Macri, CAPT, MC, USN, Director of the Health Professional Scholarship Program (HPSP), Naval Medical Education and Training Command (NMETC), to serve as the USU Vice President for Recruitment and Diversity** (on a part-time basis). The Vice President of ORD began to serve on a full-time basis, at USU, in July of 2003. CAPT Macri's previous position at the Naval Medical Education and Training Command (NMETC), where she served as the Navy's Director of Medical Department Accessions, included the Armed Forces Health Professions Scholarship Program (AFHPSP) and the Health Professions Loan Repayment Program (HPLRP). Under the leadership of CAPT Macri's results-oriented management system, ORD has developed new initiatives in support of the University's Strategic Plan, utilizing her experience, information, and validated recruitment strategies.

During 2004, the Office of Recruitment and Diversity (ORD) enjoyed success in its efforts to continue and improve initiatives that had been started, during 2003. These initiatives are focused on supporting the ORD mission to build a student body at USU that mirrors the diversity of the Nation, as well as, to provide support to student organizations that celebrate diversity. ORD recruiting initiatives, during 2004, were aimed at both high school and undergraduate pre-med students. The high school program, developed by CAPT Macri, is entitled, ***Science, Medicine and Mentoring (S2M2)***. This is the first attempt by any USU entity to develop and implement an intensive program with a rigorous curriculum for high school students (a detailed description follows). Half-day *get acquainted programs*, tailored for small or large groups of visiting undergraduate students from local colleges and universities, were developed utilizing both uniformed and civilian faculty members. In addition, outreach endeavors, by current USU student ambassadors, were carefully coordinated with nationwide undergraduate campus recruiting events.

Alumni Liaison Program. The USU/ORD Alumni Liaison Program continues to contribute to the recruitment of medical school applicants by USU SOM alumni. ***Congratulatory letters are sent to USU alumni as they are selected to the ranks of 0-5 and 0-6 in each of the respective Uniformed Services.*** As a result of a recent survey conducted by **Ms. Sharon Willis, Office of Alumni Affairs**, alumni volunteers have been enlisted to attend local recruitment events either at their undergraduate institutions or at local colleges and universities. ***More than two-thirds of the most recent USU graduates indicated that they would be willing to assist with local recruitment efforts at their respective duty stations.***

Enhancement of a Diverse Environment. The efforts expended by ORD to increase USU's overall recruitment reaped some noticeable results. As reported by the USU Office of Admissions, ***the total number of women applicants increased by eight percent (626 to 715), in 2004. And, the number of minority applicants increased from 205 to 248 (also eight percent).*** A greater effort is planned to encourage women and students among ethnic groups underrepresented in medicine to apply to USU. By seeking program participation at appropriate conferences and attending recruitment events in areas that produce the greatest number of overall medical school applicants from underrepresented ethnic groups, these numbers should continue to increase in the future. ***In addition, comprehensive career counseling and admissions assistance are offered on an on-going basis to a growing pool of qualified applicants among active duty enlisted service members and junior officers.***

During 2004, ***ORD distributed promotional materials to over 5,000 potential applicants.*** Visitors to recruitment booths and the ORD web page received an array of information outlining the benefits of a USU education, the financial incentives for attending USU, the opportunities in military medicine, and some practical advice for applying to medical schools. The great majority of recruitment materials are cost-effectively produced in-house to meet the needs of the potential candidates.

Five States and District of Columbia Model. One of the initiatives adopted by ORD during the past year is the ***Five States and District of Columbia Model***, developed by **Mr. Peter Stavish, Assistant Dean, USU Office of Admissions.** This model identifies the undergraduate institutions that provide the greatest number of applicants to USU within the surrounding regional states of Pennsylvania, Maryland, North Carolina, South Carolina, and Virginia, to include the District of Columbia. The proximity of these states, combined with the opportunity to offer on-campus tours and *get acquainted programs* and the high quality of past applicants to the school of medicine, makes this approach more cost-effective as compared to extensive travel to larger conventions and career fairs.

During 2004, staff, USU students, and Armed Forces Health Professional Scholarship Program (AFHPSP) recruiters made more than 35 visits on behalf of USU. These visits included the following campuses and/or students were from many of the following colleges or universities: Rutgers The State University of New Jersey; San Diego State University; University of North Carolina-Chapel Hill; Stanford University; Virginia Polytechnic Institute and State University; Murfreesboro State University; University of South Alabama; Oakwood College; University of Alabama at Huntsville; University of Alabama at Tuscaloosa; Stillman College; University of Alabama at Birmingham; Samford University; Spring Hill College; Alabama State University; Alabama A and M University; Auburn University; Huntingdon College; Miles College; Troy State University at Dothan; University of Mobile; University of North Alabama; University of South Alabama; Johns Hopkins University; University of Florida at Gainesville; Rollins College; University of South Florida; Xavier University in New Orleans; Northwestern University; University of California, Irvine; Massachusetts Institute of Technology; South Carolina State University; Clafin University; Chaminade University; Hawaii Pacific University; UMDNJ at Piscataway/Brunswick; Case Western Reserve University; Muhlenberg College; University of Virginia; Southern Illinois University; Birmingham Southern College; University of Montevallo; Faulkner University; and, Troy State University. ***Over 3,800 students were introduced to USU as a result of the above-listed visits to college campuses, meetings of regional and national student groups, career health fairs, and professional associations, during the 2004 Calendar Year.***

Science, Service, Medicine and Mentoring (S2M2) Summer Program 2004. As mentioned earlier, S2M2 was a pilot program developed by **Cynthia I. Macri, M.D.** CAPT Macri expended great effort to ensure that the curriculum was relevant, diverse, and intensive, and at the same time, of interest to the students. She crafted a very detailed-oriented curriculum for academically strong high school students who aspire to become physicians. Ten students were selected, ages 14 to 17, for the pilot program. The high schools represented were the Stone Ridge School of the Sacred Heart, Bethesda-Chevy Chase High School, Mt. Hebron High School, Bishop Ireton High School, and the Walter Johnson High School, all from the local area. The week-long curriculum culminated in a community health fair, presented by the students. The students created brochures describing various health-related topics and were available to answer questions and to discuss their posters. USU SOM students: **ENS Vincent Zizak; ENS Obi Ugochukwu; 2LT Anna Makela; 2Lt Josh Tyler; 2LT kimberly McKinney; ENS Conshombia McArthur;** and, prospective student, **Brad Privett**, served as student mentors, throughout the week. ***Clinical and basic science faculty from USU, the National Naval Medical Center (NNMC), the Walter Reed Army Medical Center (WRAMC), and the Armed Forces Institute of Pathology (AFIP) provided insightful discussions, hands-on laboratory sessions, and clinical mentoring.*** As a direct result of the program, three students traveled with their parents to the Minority Medical Careers Awareness Workshop sponsored by the Association of American Medical Colleges (AAMC) held in Boston, Massachusetts, on November 6, 2004. ***Evaluations received from the participants, USU students, faculty, and ORD staff revealed that the S2M2 was a great success.*** Three African American young women will participate in a volunteer program at NNMC, during the Summer of 2005. The graduating senior student will attend college this Fall on a full scholarship with the declared major of *Pre-Medicine*; an additional two students have applied for the Summer Internship Program (SIP) in Biomedical Research at the National Cancer Institute (NCI), to be held during the Summer of 2005. CAPT Macri wrote letters of recommendation for all of the above students. Two week-long summer sessions will take place, during the Summer of 2005.

Publications and Marketing. ***Do I Have What It Takes? A Guide to Medical School Admissions*** was published by CAPT Macri with assistance from the Visual Information Directorate at the Naval Medical Education and Training Command, in February of 2004. Copies were distributed to the Supervisor of Documents for the Navy for 300 Federal Libraries, which, in turn, distributed copies across the United States, including 15 copies furnished to the Library of Congress. This is the first marketing tool published solely for the purpose of attracting undergraduate students to consider USU when planning for a career in medicine; ORD now sends this pocket-sized notebook to all contacts and individuals who inquire about USU or medicine as a career. Copies were sent to the National American Medical Association Meeting, held in Chicago, Illinois; the Force Health Protection Meeting; the Annual Meeting of the Association of Military Surgeons of the United States (AMSUS); and, the National Veterans Affairs Meeting.

Ventures Scholar Program. The Ventures Scholar Program (VSP), headquartered in New York City, focuses on mentorship of disadvantaged students. A VSP subscription entitles its members to a monthly listing of high school and undergraduate students who request more information from the schools they select. All of the students are academically qualified and most are first generation college students. ***As a paid subscriber to VSP services, ORD is given another marketing option to reach disadvantaged, yet highly qualified, students.*** Most of these students aspire to become scientists and/or physicians. ORD screens the list of interested students and selects those who appear to have potential for matriculation to USU. Both a letter and an information packet are sent, followed by personal contacts via telephone or e-mail. To date, ORD has sent packets to more than 50 prospective students and continues to receive monthly inquiries from its service.

Visits from National Student Organizations. During the past year, the following student organizations visited USU: the National Native American Youth Initiative; the National Hispanic Youth Initiative; the National Student Leadership Conference; the National Youth Leadership Forum; and, Presidential Classrooms. Most of the students in these organizations are in high schools from across the Nation; and, many participate in these summer organizations to get a first-time tour of the Nation's Capital. Some, however, are also interested in a career in medicine or science; often times, it is very difficult to determine those students who are interested in such a career. ORD intends to modify its hosting of these students to include the smaller number of students who could be potential applicants to USU. The newly instituted half-day programs similar to those offered to the Delaware State University pre-matriculation students, hosted by ORD, during the Summer of 2004, should provide access to the specific groups of students who are interested in a career in science and medicine, and in particular, military medicine.

Student Support Outreach Programs. The student groups that ORD administratively supports are: the *Asian Pacific American Medical Student Association* (APAMSA); the *American Medical Student Association* (AMSA); *Women in Medicine and Science* (WIMS); and, the *Student National Medical Association* (SNMA). During 2004, USU students were very active and continued to provide outstanding recruitment support to ORD. They visited local area schools to talk with elementary, middle, and high school students; and, they also attended their various regional and national meetings. ORD will continue to include selected members of these student groups in any new initiatives undertaken during the coming year. *AMSA USU Chapter President, 1LT Josh Tyler, USAF, presented a resolution to formally recognize a Military Medical Interest Group at the AMSA National Meeting, held in March of 2005. The resolution passed by a large majority, enabling medical students, who are enrolled in military scholarship programs and USU, a voice in the largest medical student association in the United States.* USU was also recognized by AMSA as the fastest growing chapter for 2004, thanks to the efforts of **2LT Josh Tyler, USAF**, and **2LT Geoffrey Chin, USA**. Six students, **Lieutenant Commander Ron Jones, USN, USU Navy Company Commander**, and **CAPT Cynthia Macri, MC, USN, Vice President, ORD**, attended the Annual Convention of the Student National Medical Association, held in New Orleans. And, WIMS and APAMSA successfully supported two outreach initiatives at the Wheaton High School and the Stone Ridge School of the Sacred Heart, during 2004.

USU Post-Baccalaureate Program. The University began its one-year Post-Baccalaureate Program on August 9, 1999, and is in its sixth year of operation. The 2003 post-baccalaureate students were fully accepted to the USU School of Medicine, in August of 2004; and, both were commissioned into the United States Air Force. Three qualified students were accepted into the Post-Baccalaureate Program, in 2004. As the program progresses, ORD will continue to have a role in providing mentorship and counseling and any other indicated services to ensure that the participants successfully matriculate into the School of Medicine.

Through this program, USU identifies applicants to the SOM who may benefit from an introductory year consisting of a portion of the first-year SOM curriculum. Students, who achieve a grade of *B* or better, are re-evaluated for full admission to the SOM. The admissions criteria, to include physical and security standards, are the same for the Post-Baccalaureate Program students as for all other SOM applicants prior to matriculation. The Program was originally developed to enhance the cultural, ethnic, and experiential diversity of the educational environment within the USU SOM by offering the opportunity of a Post-Baccalaureate Program to selected students, who identify themselves as members of cultural or ethnic

groups traditionally underrepresented in Medicine, or who are otherwise disadvantaged. Students are administratively registered in the SOM Graduate Education Program and receive an annual stipend similar to a first-year graduate education student. The USU Executive Committee initially approved the design, criteria, funding, and evaluation of the Program; each year, this committee evaluates the Program, before commitments are made, to determine its continuation. As in past years, the USU Office of the General Counsel, the Admissions Office, and the ORD staff collaborated to ensure that the Program objectives were met.

The Office of the Brigade Commander. The USU Brigade Commander is recognized as *the senior active duty officer* of the University and reports directly to the President of USU. It is the responsibility of the Brigade Commander to ensure that the uniformed personnel assigned to the University adhere to the appropriate service specific standards set by their parent Services. In addition, the Brigade Commander assures that the interests of the military members assigned to the University are addressed and that they remain competitive for promotion with their service peers. Under the leadership of the Brigade Commander, the uniformed students, faculty, and staff assigned and reporting to the School of Medicine (SOM), the Graduate School of Nursing (GSN), the Graduate Education Programs, or other USU activities, programs or divisions must participate in all activities and events as they would in any other command of the Uniformed Services. Regular formations are held; physical fitness exercises, standards, and testing are adhered to; performance evaluations are completed and rated; and, uniformed personnel are trained in the appropriate uniformed programs and customs.

A Multi-Service Environment. The USU Brigade provides a clear chain-of-command for all uniformed members, thus allowing individuals to rapidly assimilate into their new units and the multi-service environment of USU. The Brigade Command structure includes three subordinate commands that report directly to the Brigade Commander. These subordinate commands include the Commandants from both the SOM and the GSN and the Headquarters Company Commander, who is responsible for the health and welfare of all assigned enlisted service members. The SOM has three Company Commanders representing the Army, Navy, and the Air Force; they are specifically assigned to USU to provide for military training in officership and leadership. A United States Public Health Service officer is also responsible for providing this special training to the Public Health Service students. The Company Commanders are mentors for the students and they deploy with them, during each of the University's field training exercises. The USU uniformed faculty and staff also conduct service-unique training, inspections, and military formations. Similar to the Service Academies, each student class also has its own military command leadership structure. The students rotate positions among the class members, which increases individual exposure in the management of specific assignments, duties, and *command* roles. Tactical senior medical non-commissioned officers are also assigned to each student company to provide mentorship and to assist the Company Commanders with training requirements.

Establishment of the Office of the USU Chaplain. In July of 1999, the Navy Surgeon General approved additional billets for a Navy chaplain and an enlisted assistant at the USU joint command. The arrival of the chaplain and his assistant as *the first permanently assigned ministry team at USU* filled a void in pastoral care that had existed since the foundation of the University. Following the establishment of the Office of the USU Chaplain, within the Brigade Command, essential counseling and guidance is now available and provided to the USU students and assigned staff.

The mission of the Office of the USU Chaplain is to support and enhance the quality of life of the USU military personnel, to include their families, through spiritual development, as needs are identified and requested. The Office facilitates the free exercise of religion for USU military personnel and their families. Chaplain ministry is needs-based, performed cooperatively, and executed within a pluralistic environment. Faith-specific Student Associations are formed as needs are identified. USU faculty and staff are encouraged to participate in the Student Association of their choice and to support and/or mentor the students in their spiritual formation in a similar manner as guidance is provided for the development of academic skills. Within regulations, under the University President and the Brigade Commander, and administered by the Office of the Chaplain, the Student Associations are self-governed to meet the specific needs and interests of their constituents. The areas of Ministry are: 1) Pastoral Care (*to include prayer,*

scriptures, insight, listening, encouragement, and support); 2) Pastoral Counseling (*provision of individual, marriage, and family counseling on moral, ethical, emotional, spiritual, or faith issues*); 3) Pastoral Visitation (*ministry of presence at the University, visitation of the hospitalized and confined, and pre-operative prayer or counseling, as requested*); 4) Spiritual Direction (*integration and guidance provided to an individual for spiritual development*); 5) Observance of Religious Rites (*religious observances, command functions, memorial services, and social activities*); 6) Classes and Seminars (*discussions in the areas of value formation, ethical decision-making, bioethics, and faith-related topics*); 7) Literature Ministry (*provision of devotional, inspirational, and self-help literature*); 8) E-Mail (*communication of the thought-for-the-day and weekly inspirational thoughts*); 9) Referral Service (*assistance in locating a place of worship, military or civilian, and counseling referrals for requested guidance outside of the Chaplain's expertise*); and, 10) Field Exercises (*provide worship services, training, and ministry in the field environment for students and staff*).

Development of International Relationships. In the Fall of 2000, the USU Brigade Commander initiated a dialogue with the Commander, German Armed Forces Command, United States and Canada, which resulted in the establishment of the ***German Troop Duty Proficiency Badge Program at USU***, making the University the first United States Armed Forces medical organization, in the Military District of Washington, to gain sponsorship from the German Armed Forces Command for this program.

The program provides USU students and faculty with an opportunity to compete for, and attain, the prestigious ***German Troop Duty Proficiency Badge, which recognizes excellence in both physical fitness and readiness***. Besides being a foreign badge, the award is unique, because earning the badge is strictly based on the abilities of each participant and not dependent on the decision of an awards board. Facilities and logistics for the USU program involve strong community relations with agencies and personnel outside of the University, including the Walt Whitman High School at Fort Meade, Maryland, and the National Naval Medical Center, in Bethesda, Maryland.

In order to earn the badge, individuals must achieve minimum standards involving times and distances, while qualifying in the following events: shot put; long jump; sprint (*75 meters for women; 100 meters for men*); swim (*200 meters*); marksmanship (*9 millimeter pistol*); long distance run (*2,000 meters for women; 3,000 meters for men*); and, a road march (*distances range from 20 to 30 kilometers, depending on age, sex, and type of badge - bronze, silver, or gold - that the participant is qualifying for*). Participants must also be in good standing with the University/Brigade and pass a first-aid course. There are two main road marches each year, followed by an awards ceremony: the *US/GE Day*, hosted by the Military District of Washington, during the Spring; and, the *GE/US Day*, hosted by the German Armed Forces Command, during the Fall.

Upon the successful completion of all events, the German Armed Forces Commander presents each individual with a certificate and badge. Participants may then provide their Unit Awards and Decorations Representatives with a copy of their certificates, which are then forwarded to their respective Service Major Command Personnel Centers for inclusion in their permanent military records. During 2004, 32 USU medical students and faculty members competed for the German Troop Duty Proficiency Badge.

Official Wear of the Badge: Army and Air Force personnel are authorized to wear this badge on their service dress uniforms; Navy personnel are not authorized to wear the badge.

Assurance of Operational Skills. The Brigade's Operations Department provides the planning, coordination, and logistical support for the USU military field training exercises for the first- and fourth-year medical students. The Operations Department planned and executed five major exercises, during 2004. Three Operation Bushmaster exercises were held at Camp Bullis, Texas: January 13-22, 2004 - **Operation Bushmaster 01-04**; September 20-30, 2004 - **Operation Bushmaster 02-04**; and, November 13-23, 2004 - **Operation Bushmaster 03-04**. The fourth major exercise was held on June 21 - July 1, 2004 - **Operation Kirkesner** at Fort Indian Town Gap, Pennsylvania. And, on April 29, 2004, the fifth major exercise, the **Antietam Road March**, took place at the Antietam Battlefield, Maryland. Through training such as Operations Kirkesner and Bushmaster, USU encourages each uniformed student to develop and maintain the special skills required to earn a leadership position in military medicine (*see Section II, MILITARY UNIQUE CURRICULUM, for further information*).

This year's Operation Kerkesner was the first to be conducted at Fort Indian Town Gap, Pennsylvania. This exercise was intended to not only train the first-year students, but also to validate Fort Indian Town Gap as a training site. ***Due to the success of Operation Kerkesner, the Interim President of USU gave approval to plan and execute the combined Operation Kerkesner/Operation Bushmaster exercises in July of 2005. The new name for this combined exercise will be the New Integrated Field Exercise (NIFE) for all future references.***

During the Summer of 2004, the USU Brigade Commander reported that the second-year medical students had participated in the following activities: **Army** - Mountain Warfare School; Clerkships at the Army Surgeon General's Office; Operational Emergency Medical Skills Course; National Training Center, Fort Irwin; Expert Field Medical Badge; and, United States Army Operational Units (*i.e., Fort Bragg, Fort McCoy, Fort Carson, Fort Riley, and Vicenza, Italy*); **Navy** - Airborne School; Diving School; Aerospace Medicine (*USS Roosevelt*); United States Navy SEALs; BUDDs, San Diego, California; Top Gun; Mountain Warfare Training; Amphibious Warfare School; Neuroanatomy Computing; Air Training Wing One, NAS Meridian, Mississippi; Air Training Wing Two, NAS Kingsville, Texas; *USS Carl Vincent*; NAVMED Clinic La Maddalena; HMX-1, Quantico, Virginia; 2nd Marine Division, Camp LeJeune, North Carolina; *USNS Mercy Hospital Ship*; the United States Navy Special Warfare Detachment; Tropical Medicine Course, Brazil; and, Sigonella, Italy; **Air Force** - Medical School Orientation to Aerospace Medicine; and, United States Air Force Hospitals and Research. From qualifying for the Expert Field Medical Badge, to conducting undersea medical research with the United States Navy SEALs, USU students are developing and maintaining the special skills required to assume leadership positions in uniformed medicine. Additionally, the diverse and exciting training USU students complete during their summer training activities helps the University to accomplish ***Strategy 6.4.2 of the USU Strategic Plan: USU faculty, staff, students, and alumni, both on-site and off-site, will be provided information relevant to their career enhancement, mission, and interests.***

The Brigade Headquarters Company is the enlisted Brigade Command support element for USU. In addition to the performance of their military occupation specialties, during normal duty hours, the enlisted members of the Headquarters Company ensure that equipment, supplies, transportation, and personnel are positioned to accomplish all major field exercises, per year. The Brigade is responsible for ensuring that the enlisted personnel at USU are proficient in their operational support skills that enable them to remain competitive for promotion.

Orientation Responsibilities. During the first quarter of each Academic Year, the Brigade staff conducts an orientation/in-processing week for all uniformed students, whether they are matriculating into the SOM, GSN, or the Graduate Education Programs. In the case of the 167 first-year medical students for

Academic Year 2004, Brigade letters were issued to the incoming students to include a detailed calendar of events outlining their in-processing week. This increased level of detail facilitates the orientation process and eliminates students' concerns over appropriate uniform, classroom, and Brigade requirements. The military aspects of the University are stressed during the first week, as well as, the students' responsibilities in their primary role as military officers.

Recruitment Efforts for Underrepresented Communities. The Brigade continued to reach out to the ROTC and underrepresented communities, during 2004. The Brigade's recruitment efforts, during 2004, included presentations on the value of a USU medical education at the following universities: the University of Arkansas at Little Rock; the University of Westminster, Missouri; the University of Mississippi; and, the University of Missouri. The membership of **Charles S. Serio, Colonel, MS, USA, USU Brigade Commander**, on the Medical Advisory Selection Committee, at West Point, continued to give USU exposure to some of the top military academy students in the country.

USU Color Guard. Formal ceremonies have continued to be an important element of military tradition since the earliest armies and navies entered combat. Whether at a retirement, change-of-command, or a unit stand-up, the military goes to great lengths to showcase its command, its people, and its pride in the Nation. Color guards have long been an important part of these ceremonies; and, USU is carrying on that tradition through the establishment of its own color guard, in 1997. The USU Color Guard is comprised of enlisted members from the Army, Navy, and the Air Force. The first major performance of the USU Color Guard occurred at the 1997 USU Graduation; the colors were also presented, during the USU Brigade Change-of-Command Ceremony, in 1997, and at the Headquarters Company Change-of-Command Ceremony, in May of 2004. This past year, the USU Color Guard had the opportunity to represent the University and the military at the opening of major sporting events and to participate in numerous off-campus retirements/funerals and congressional events. During the USU May graduations, from 1998 through 2004, the USU Color Guard has brought the colors on stage during the commencement ceremonies, which are held at the National Society of Daughters of the American Revolution Constitution Hall, in Washington, D.C. The USU Color Guard was a key participant in the retirement ceremonies for the USU President, James A. Zimble, M.D., in August of 2004. The Color Guard was also invited and participated at a special Veterans Day Ceremony at the Halls Crossroads Elementary School, in Aberdeen, Maryland, on November 11, 2004. And, during 2004, the Color Guard performed at the annual *USU Dining-Out*, during the Presentation Ceremony, as well as, at the National Association of Military Surgeons of the United States (AMSUS) Convention, in San Antonio, Texas.

Officer Indoctrination Training of USU Matriculants. Formal studies were undertaken, in 2003 and 2004, to assess the value of conducting a *Basic Officer Indoctrination Course* on the USU campus for all Army, Navy, and Air Force matriculants to the USU SOM. At the present time, the Surgeons General spend approximately \$500,000 per year to transport and house USU non-prior-service Navy and Air Force matriculants and all of the USU Army matriculants so that they can attend their service-specific officer indoctrination courses, prior to their arrival at USU. Because of the time constraints that occur due to the timing of college graduations, the notice of final acceptance by USU Admissions, and the receipt of official military orders, some of the USU matriculants have been unable to attend these courses prior to their arrival, at USU. Due to the USU requirements for military training during the Summer following the first year of medical school, it is almost impossible for those students, who miss their indoctrination courses, to make them up without impacting on their medical education requirements. The Brigade currently proposes to investigate the efficiency of having all USU matriculants attend a *USU TriService Indoctrination Course*,

to be held at USU, during July and August, prior to the Brigade orientation and class initiation activities. Topics, which are applicable to all Services, would be held in a large lecture room, while service-specific topic sessions would be held in the smaller USU classrooms. Faculty from USU could be augmented with temporarily assigned instructors, as required by each of the present course coordinators. Incoming students would no longer be required to travel elsewhere, before their arrival at USU, which would accommodate the location of housing for themselves and their families, prior to course commencement. Although cost-savings would be partially offset by the temporary travel and housing for the visiting faculty, the overall savings would still be significant. In addition, each in-coming class would have the opportunity to develop a strong sense of *esprit de corps*, prior to the beginning of classes. This effort would fall under **Strategy 6.4.2 of the USU Strategic Plan**, since USU would be providing an additional level of military educational training specifically for the USU SOM students. **Goal 3 of the USU Strategic Plan:** *We will optimize resources to efficiently and effectively implement USU core capabilities*, supports the proposed USU effort to coordinate with each of the Services to generate cost-effectiveness for the administrative and financial aspects of the current process for USU SOM student indoctrination.

Goal 5, STEWARDSHIP, of the USU Strategic Plan includes a requirement for the University to establish an enhanced sense of intramural community. The Combined Federal Campaign is one event, which crosses all boundaries within the University and unifies the entire USU community, through a common goal of sharing with those who are in need, either in our own community, or on a global scale.

USU Exceeds Established Goals for the Combined Federal Campaign. From 1997 through 2004, the University has exceeded its Combined Federal Campaign (CFC) goal, due to the tremendous efforts and coordination of the Office of the USU Brigade Commander. Under the leadership of the USU Campaign Managers, the total contributions reached over \$176,599, in 2004. Approximately 55 percent of the USU staff, students, and faculty contributed to the Campaign for worthy community, national, and world charities. ***The Year 2004 marks the eighth consecutive year in which the University has exceeded its goal.***

USU also earned the **2004 CFC Honor Award** for attaining 105 percent of its goal of \$169,000 and for having a per capita gift of over \$175. In doing so, USU had a total of 64 *Eagle* donors (46 single *Eagles* with contributions representing at least one percent of the employee's salary; and, 18 double *Eagles* with contributions representing at least two percent of the employee's salary).

UNIVERSITY HONORARY DEGREES, AWARDS AND RECOGNITION

The University will promote a sense of family, community and outreach.

- Goal 5, STEWARDSHIP, USU Strategic Plan.

The University Has Granted a Total of 37 Honorary Degrees Since its Establishment. Since the first Honorary Degree that was granted in 1991, *through April of 2005*, a total of 37 recipients have been selected. The Honorary Degree recognizes individuals who have demonstrated outstanding support for the Military Health System and/or the Uniformed Services University of the Health Sciences.

Honorary Degree Recipients:

1991 Jay Sanford, M.D., Third President of the University and first Dean of the School of Medicine, recognized as a major participant in the establishment and early leadership of the University;

1992 Harry C. Holloway, M.D., Professor, USU Department of Psychiatry, and Deputy Dean from 1990 through June 1992, recognized for unwavering support during a transitional period;

1993 The Honorable Daniel K. Inouye, United States Senator from Hawaii, Senate Appropriations Committee, recognized for continuous leadership and support for Military Medicine and the University as one of the original members of the Congress who supported the establishment of the University;

1994 Mr. Zachary Fisher, Champion of the Armed Forces, recognized for his founding of the Intrepid Museum, the Fisher House Foundation, the Fisher Armed Services Foundation, and his tremendous support for both Military Medicine and the University;

The Honorable David Packard, Former Deputy Secretary of Defense, first Chairman of the USU Board of Regents, and Acting President of USU from 1976 to 1981, recognized for his oversight, during the original construction of the USU campus, and his constant support for Military Medicine and the University from its establishment in 1972, until his death, in 1996;

1995 The Honorable Sam Nixon, M.D., Former Chairman of the USU Board of Regents and Founder of the USU Tradition of the Mace for the University Commencement Ceremonies, recognized for his dedication to Military Medicine and the superb leadership he provided to the University;

Frank Reynolds, M.D., Internationally recognized throughout the practice of civilian medicine and for his continuous support and interest in both Military Medicine and the University; he was also the commencement speaker, during the 1995 Commencement Ceremonies;

The Honorable Strom Thurmond, United States Senator from South Carolina, Chairman, Senate Armed Services Committee, recognized for continuous leadership and support for Military Medicine and the University and as one of the original members of the Congress who supported the establishment of the University;

1996 Michael E. DeBakey, M.D., Renowned Surgeon, who has been recognized by numerous Presidents of the United States and leaders of many nations, for his knowledge of medicine and his unwavering support for Military Medicine and the University;

The Honorable Melvin R. Laird, Former Secretary of Defense and continuous supporter of Military Medicine and the University, recognized for his provision of essential guidance and support, since the establishment of USU;

Francis D. Moore, M.D., Internationally recognized as a distinguished Surgeon and supporter of Military Medicine and for his consistent support to the educational programs within the University;

1997 Donald L. Custis, M.D., Vice Admiral (Retired), Former Surgeon General of the United States Navy, recognized for his career of dedicated service to Military Medicine and consistent support for the University;

The Honorable C. Everett Koop, M.D., Former Surgeon General of the United States and Member of the USU Board of Regents, recognized for his consistent support for Uniformed Medicine and the University;

The Honorable Constance Morella, Member of the United States House of Representatives from the State of Maryland, recognized for her outstanding dedication to quality health care, medical research and technology, and for her unwavering support for the University;

President Ronald W. Reagan, President of the United States from 1980 through 1988, recognized for his dedication to the welfare of the Armed Forces, Military Medicine, and the University;

1998 General Charles Krulak, Commandant, United States Marine Corps, recognized for his outstanding support for Military Medicine and for the welfare of the University; he presented the commencement address, during the 1998 Commencement Ceremonies;

Joshua Lederberg, Ph.D., Nobel Laureate and Internationally Recognized as a Leader in Medicine and for his participation in, and support of, University activities and programs;

V. M. Rexroad, Brigadier General, United States Air Force, recognized as one of the original supporters of the University and for his dedication to Military Medicine and long-term dedication to the welfare of the University from its establishment, until his death, in 2002;

David C. Sabiston, Jr. M.D., Internationally Recognized throughout the Civilian Practice of Medicine for his dedication and support of Military Medicine in general and for his unwavering support for the University;

1999

Oliver H. Beahrs, M.D., Professor of Surgery, Emeritus, Mayo Medical School, Past President of the American College of Surgeons, recognized for his continuous support for Military Medicine in general and for his on-going and dedicated support for the University;

Sheila Burke, Executive Dean, Lecturer in Public Policy, John F. Kennedy School of Government, Harvard University, Former Chief of Staff, Office of the Republican Leader, United States Senate, from 1986 to 1996, recognized for her dedication to Military Medicine and the University;

The Honorable Paul S. Sarbanes, United States Senator from Maryland, recognized for his unwavering support of, and dedication to, essential legislation for both the Military Health System and the University;

2000

The Honorable William S. Cohen, Secretary of Defense, recognized for his outstanding support and dedication to Military Medicine and to the welfare of the University;

2001

The Honorable Robert J. Dole, Former United States Senator from Kansas and Senate Majority Leader, recognized for his tremendous history of service to his Nation during War and Peace and for his commitment to the health care of the Armed Forces and to the University;

Val G. Hemming, M.D., Professor and Dean Emeritus, USU School of Medicine, recognized for his dedicated and outstanding service, which began in 1965, through his retirement, in 2002; his sincere and successful leadership resulted in tremendous acclaim for the University from the Department of Defense and the United States Congress;

The Honorable Theodore F. Stevens, United States Senator from Alaska and Chairman of the Senate Appropriations Committee, recognized for his great dedication to the Nation, the health care of the Armed Forces, and the continuation of the University;

2002

Faye Glenn Abdellah, Ed.D., Sc.D., RN, FAAN, Professor and Dean Emerita, USU Graduate School of Nursing, recognized as a nurse, educator, researcher, an internationally acclaimed leader, and the Founding Dean of the newly established and accredited Graduate School of Nursing;

F. William Blaisdell, M.D., Professor of Surgery, UCD, and Chief of Surgical Services, Sacramento, VA Medical Center, recognized as a physician, researcher, and scholar, for a lifetime of service to the cause of medicine, and as a friend of military medicine and USU;

The Honorable Lonnie R. Bristow, M.D., Past President of the American Medical Association and Chairman of the USU Board of Regents, recognized as a driving force in the American Medical Association and for the initiation of a ground-breaking project in performance measures to determine the success of USU students and graduates;

Anthony R. Curreri, M.D., First President of USU, Recipient of the Department of Defense (DoD) Distinguished Public Service Award, in 1977, recognized, posthumously, for his leadership and vision, during the establishment of the University. From 1974 through 1976, he led the development and implementation of the strategies, goals and organizational structure, which ultimately ensured that USU would meet its mission to provide continuity and leadership for the Military Health System. Doctor Curreri orchestrated collaborative efforts with the military departments, medical associations, and civilian universities during the creation of USU's first academic programs;

2003

The Honorable Richard H. Carmona, M.D., M.P.H., F.A.C.S., Vice Admiral, United States Public Health Service, Assistant Secretary for Health (Acting), Health and Human Services, Surgeon General of the United States, recognized for his on-going, Nation-wide leadership in the areas of medical preparedness and Homeland Defense and for his continued support for the University faculty and students;

John A. Mannick, M.D., Past-President of the Societies for Vascular Surgery and Surgical Chairmen, the American Surgical Association, the North American Chapter of the International Society for Cardiovascular Surgery, the New England Society for Vascular Surgery, and the USU Surgical Associates, recognized for serving over 20 years on the Visiting Board to the USU SOM Department of Surgery and for his untiring support for the University faculty, staff and students;

Major Alfred V. Rascon, MS, USA, Medal of Honor Recipient, recognized for his courageous service as an Army medic, during combat in the Republic of Vietnam, where he refused treatment for his wounds until his comrades were safe, and for serving as a role model for the graduates of the University;

Martin E. Silverstein, M.D., Clinical Professor, Family and Community Medicine (International Medicine), Georgetown University School of Medicine; Member, Executive Committee, World Association for Emergency and Disaster Medicine; Senior Fellow, American College of Gastroenterology; Clinical Professor of Surgery, USU SOM, was recognized as a physician, innovator, researcher, scholar and friend of the University. For over 20 years, he provided invaluable mentorship and support to the faculty, staff and students of the University;

(Three Honorary Degrees Were Conferred During 2004)

2004

General Barry R. McCaffrey, USA (Retired), received the Doctor of Military Medicine *Honoris Causa* in recognition of his selfless service to the Nation as

America's most decorated four-star General, his leadership as the Director of the White House Office of National Drug Control Policy, and his commitment to military health care and research;

The Honorable C.W. Bill Young, United States Representative from Florida and Chairman of the House Appropriations Committee, received the Doctor of Medical Jurisprudence *Honoris Causa*, in recognition of his great dedication to the Nation, the health care of the Armed Forces, and the continuation of the University; and,

The Honorable John Patrick Murtha, Jr., United States Representative from Pennsylvania and Ranking Member of the Defense Appropriations Subcommittee, received the Doctor of Medical Jurisprudence *Honoris Causa*, in recognition of his dedication to the Nation as a bi-partisan leader in Congress and advocate of military medicine and research.

The University Medal.

Background. The University Medal is one of the University's highest honors. It was created in 1999, to pay tribute to deserving alumni, staff, and faculty members, friends and supporters of the University, its schools, programs, and mission. The recipients are recognized for professional or academic success or public service. Receipt of the University Medal is by endorsement and recommendation of the USU Committee for Names and Honors, submitted through the USU President, with the approval of the USU Board of Regents.

The University Medal, molded from silver, displays the University Seal on the front side; the medal's number, recipient's name, and the award date are engraved on the reverse side. 2004 marked the fifth annual presentations of the University Medal. As of April 2005, a total of 22 individuals have received the University Medal.

University Medal Recipients:

1999 **Lieutenant General Ronald Blanck, Surgeon General of the Army**, received the first University Medal at the November 1, 1999 Meeting of the USU Board of Regents. As Surgeon General, he served as a member and Chair of the USU Executive Committee; he was also the Assistant Dean of Student Affairs at USU, from 1976 through 1979;

2000 **David O. Cooke, Director of Administration and Management, Office of the Secretary of Defense**, was awarded the University Medal, during the USU Commencement Ceremonies on May 20, 2000, in recognition of his long-term service in the Office of the Secretary of Defense (OSD). From 1957 until his death

in 2002, Mr. Cooke provided continuous support and administrative guidance for Military Medicine and the University;

Rear Admiral Michael L. Cowan, MC, USN, Chief of Staff for the Assistant Secretary of Defense for Health Affairs (and later Surgeon General of the Navy), received the University Medal in recognition of thirty years of dedicated service in support of Military Medicine and the University. Admiral Cowan received the University Medal, during the USU Commencement Ceremonies, on May 20, 2000, following his presentation of the Commencement Address;

Jeffrey R. Swope, Director, USU Audio Visual Center, upon his retirement from public service, was recognized for his leadership in the establishment of the University Audio Visual Center, during 1977, and for his 23 years of continuous dedication and unwavering support to the USU community. The University Medal was presented on May 20, 2000, during the USU Commencement Ceremonies;

2001

Lieutenant Colonel Yvonne Andejaski, MC, USA, USU SOM Class of 1983, completed a residency in radiation oncology; she was board-certified, in 1987, and was active in patient care and research. She served as the Acting Chief of Radiation Oncology at the National Naval Medical Center and as the Chief of Radiation Oncology at the Walter Reed Army Medical Center, as well as, the Radiation Oncology Consultant to the Surgeon General of the Army. In addition to serving as the Program Manager for a congressionally-directed \$240 million breast cancer research program, in 1998, she co-designed and co-managed the development of the DoD Breast Cancer Treatment Guidelines using a TriService, multi-specialty panel of oncologic, surgical, and primary care and psycho-social clinicians. Following her own diagnosis of breast cancer, in 1994, she selflessly continued her work through the Spring of 2001, when she retired from the Army and assumed a position at the National Cancer Institute. On March 31, 2001, during a retirement party in Doctor Andejaski's honor, Doctor Lee Poth presented the University Medal, on behalf of the University, in recognition of LTC Andejaski's significant contributions to research, medicine, the military, and the University. Doctor Andejaski died, in October of 2001;

Gerald W. Fischer, M.D., Colonel, MC, USA (Retired), received his commission in the United States Army in 1971, and began his pediatric training at the Madigan Army Medical Center, followed by an Infectious Disease Fellowship at the Tripler Army Medical Center. After arriving at USU in 1977, he earned the faculty rank of professor, within four years. During his twenty-year tenure in the USU Department of Pediatrics, he held numerous positions of importance. He is a superb clinician who has trained numerous military physicians as fellows in his specialty. His scientific career has been quite successful, earning both national and international recognition; he has also founded his own biotechnology company, Biosynexus. The University Medal was presented, on May 19, 2001, during the 2001 Commencement Ceremonies;

Connie Mariano, Rear Admiral, MC, USN, USU SOM Class of 1981, the first USU SOM Graduate to be promoted to O-7, was the Commencement Speaker, during the 2001 USU Graduation Ceremonies. During June of 1992, RADM

Mariano became the first military woman to be named White House Physician; in February of 1994, she was promoted to Director of the White House Medical Unit and Senior White House Physician. **Doctor Mariano was promoted to Rear Admiral (lower half) on July 1, 2000, making her the first Filipino American to become an admiral in the history of the United States Navy.** The University Medal was awarded, following RADM Mariano's presentation of the USU Commencement Address, on May 19, 2001;

Michael N. Sheridan, Ph.D., USU SOM Associate Dean for Graduate Education, was recognized for his tremendous service to the University since 1980. Following his planned retirement during 2002, the University's presentation of this award reflected the tremendous respect and gratitude held by all for Dr. Sheridan's dedicated service and accomplishments, during his more than twenty years of outstanding service to the University. The University Medal was presented, during the USU Commencement Ceremonies, on May 19, 2001;

Craig Llewellyn, M.D., Professor and Chair, Department of Military and Emergency Medicine, received the University Medal on August 23, 2001, during the welcoming ceremonies for the new students. The award recognized the superb dedication of Doctor Llewellyn who served as the Department Chair of Military and Emergency Medicine for 14 years (1987 through 2001). Doctor Llewellyn first joined USU, in 1982, when he was selected to serve as the Commandant of Students, from 1982 through 1987. Doctor Llewellyn has served as a foundation for the University in its continuous efforts to effectively respond to the special needs of military medicine. He also served as the Director of the Center for Disaster and Humanitarian Assistance Medicine (CDHAM), which he established;

Norman M. Rich, M.D., Professor and Chair, Department of Surgery, was awarded the University Medal on August 23, 2001, during the 16th Annual Surgery for Trauma Day. Since the very inception of the University, Doctor Rich has continuously provided support and encouragement to the faculty, students, and graduates of the School of Medicine. On both the national and international scenes, Doctor Rich has contributed to a positive awareness of the University through his international efforts and memberships in elite organizations. He has been responsible for on-going visits by prestigious organizations to USU. Two examples of such visits include the Society of University Surgeons (*this premier organization for young academic surgeons has held two meetings at USU, whereas the majority of United States medical schools have never been visited*) and, the International Surgical Group composed of Professors from leading Canadian, British, Scandinavian, and United States Schools of Medicine;

2002

Val G. Hemming, M.D., Professor and Dean Emeritus, USU School of Medicine, was awarded the University Medal on April 25, 2002, by the University President, during Dean Hemming's retirement ceremony. Dean Hemming first came to USU in 1980 and served in the Department of Pediatrics, where he was appointed as the Department Chair, in 1987. In 1995, he served as the Interim Dean, until his appointment as Dean, in May of 1996. Under his leadership, the curriculum of the SOM was thoroughly reviewed and enhanced to better meet the special needs of the Uniformed Services. In all matters, Dean Hemming efficiently

kept the welfare of the students, faculty and staff of the SOM as a driving force, throughout his successful leadership;

Scott R. Lillibridge, M.D., CAPT, USPHS, USU Class of 1981, Leader of the Health and Human Services Coordinated Bioterrorism Initiative in July 2001, was awarded the University Medal, on May 18, 2002, at the USU Commencement Ceremonies. CAPT Lillibridge was also the Guest Speaker at the 2002 USU Commencement. At that time, CAPT Lillibridge served as the Special Assistant for Bioterrorism for the Secretary of Health and Human Services (HHS) and directed anti-terrorism efforts across HHS. He also served as the Director of the Bioterrorism Preparedness and Response Program for the Centers for Disease Control and Prevention, from 1998 through 2001. He joined the CDC in 1990, and in 1995, he led the United States Medical Delegation to Japan after the sarin gas attack in the Tokyo subway. Dr. Lillibridge also was the lead physician for the United States Public Health Service response following the Oklahoma City bombing. He has served in 14 nations on epidemiology and other public health issues; has had three books in press; and, authored or co-authored 25 publications on bioterrorism and various other public health issues;

Chester J. Pletzke, A.M.L.S., Former Director of the USU Learning Resource Center, received the University Medal, at the USU Commencement Ceremonies, on May 18, 2002. Mr. Pletzke provided exceptional service to USU for 24 years as the Director of the USU Learning Resource Center (LRC). His visionary planning, advocacy, entrepreneurship, marketing skills, and creativity resulted in the LRC becoming one of the outstanding medical university libraries and information centers in the United States. He forged partnerships with the National Library of Medicine, medical publishers, other medical libraries, information technology providers, and various government libraries to ensure that the LRC retained its national leadership. Every accrediting entity, since the establishment of the LRC, has recognized his superb leadership and the extraordinary support provided by the LRC to the students, faculty and staff at USU;

Dale C. Smith, Ph.D., Professor and Chairman, Department of Medical History, received the University Medal at the USU Commencement Ceremonies on May 18, 2002. Doctor Smith has already provided over twenty years of exemplary service to the University as a superlative teacher; mentor and critic; scholar of the history of medicine, military medicine and science; and, as a department administrator. His contributions in redefining scholarship and revising the University's essential policies for faculty appointment, promotion, and tenure have been critical. He has assisted with the development of new graduate programs in medical history, military applied physiology, and laboratory and animal medicine. In his capacity as an invited lecturer on medical and military history, throughout the Nation, and in many parts of the World, he has enhanced the recognition of USU, its mission, and the proud heritage of military medicine, in the United States;

Faye Glenn Abdellah, Ed.D., Sc.D., RN, FAAN, Professor and Dean Emerita, USU Graduate School of Nursing, received the University Medal on May 30, 2002, from the University President, during her retirement ceremony. Upon her arrival at USU, in 1993, Doctor Abdellah was faced with urgent requirements to

establish curricula, select a faculty, and gain approval from accrediting entities for the establishment of the USU Graduate School of Nursing (GSN). She accomplished all requirements with extraordinary success. As of April 2003, 183 advanced practice nurse graduates of the GSN had received graduate degrees in their specialties and were serving the Nation, in the Uniformed Services. The Nursing Chiefs of the Armed Forces extolled the success of the GSN during 2001-2002, when they met with the two accrediting organizations. Under the leadership of Dean Abdellah, the GSN met its mission and succeeded far beyond the established goals of the United States Congress and the Military Health System;

2003

John Sarvey, Ph.D., USU SOM Professor of Pharmacology and Neuroscience, was awarded the University Medal, on May 28, 2003. Doctor Sarvey was born in North Tonawanda, New York, and received his undergraduate training at Williams College, Massachusetts, majoring in chemistry. He then joined the Army Special Forces as a medic, where he rose to the rank of Sergeant First Class, serving for one year on active duty and a further six years in the National Guard. While in the National Guard, he completed a Ph.D. Degree in Pharmacology at the State University of New York at Buffalo. Doctor Sarvey joined the USU SOM Department of Pharmacology, in 1979; at the time of his death on August 20, 2003, Doctor Sarvey's research had attracted national and international attention. He used electro-physiological techniques to elucidate mechanisms underlying the phenomenon of long-term potentiation (LTP) in hippocampus and other brain regions. His laboratory was the first to show that LTP was prevented by inhibitors of protein synthesis and to identify roles for specific neurotransmitters. It is greatly to his credit that many of his students and trainees have gone on to develop distinguished research careers. He was also an excellent teacher of medical students, receiving on-going student recognition for his outstanding teaching skills. After his condition was diagnosed, he continued as the Course Director for the Medical Pharmacology Course. Doctor Sarvey's dedication, enthusiastic teaching and scientific contributions will be long remembered. He is greatly missed by his USU family;

John W. Lowe, Colonel, Medical Service Corps, United States Army (Retired), President and Chief Executive Officer of the Henry M. Jackson Foundation for the Advancement of Military Medicine, received the University Medal on May 9, 2003. Mr. Lowe joined the Henry M. Jackson Foundation (HJF), in 1988, after serving more than 30 years in the Medical Service Corps of the United States Army. His last active duty assignment was devoted to supervising the Directing Headquarters of the United States Army Europe, 7th Medical Command, which provided health care for over 500,000 United States military health beneficiaries, throughout Europe. For nearly ten years, Mr. Lowe has served as the HJF Program Director for a multi-year, multi-million dollar HIV research program conducted by the Department of Defense and the Foundation. Mr. Lowe has served as the President and CEO of the Henry M Jackson Foundation, since 1990. During the past 14 years, Mr. Lowe has ensured that the HJF continues to provide extensive scientific and project management services, of the highest quality, in support of military medical research and education at USU. Mr. Lowe has been instrumental in ensuring that the partnership between the Foundation and USU has grown and flourished; for example, during 2003, the HJF sponsored 43 research bridge grants

and, during the past few years, the HJF has awarded Research Fellowships to 11 outstanding graduate students at USU;

Leslie Sobin, M.D., Off-Campus Faculty Member and Lecturer, USU SOM Department of Pathology, received the University Medal, on May 22, 2003, on the basis of her prolonged contributions to the teaching programs of the USU SOM Department of Pathology. Doctor Sobin has lectured the USU SOM second-year medical students extensively on her subspecialty in Pathology, thus greatly enriching the curriculum for the SOM students. She is a world-recognized leader in Pathology and has delivered all of the USU SOM lectures on Gastrointestinal Pathology, since 1981. She is a superb lecturer and was nominated for the University Medal for her outstanding contributions, for over 23 years, to the USU SOM Department of Pathology;

Diane Solomon, M.D., Off-Campus Faculty Member and Lecturer, USU SOM Department of Pathology, received the University Medal, on May 9, 2003, based on her prolonged contributions to the teaching programs of the USU SOM Department of Pathology. Doctor Solomon has lectured the USU SOM second-year medical students extensively on her subspecialty in Pathology, thus greatly enriching the curriculum for the SOM students. She is a world-recognized leader in Pathology and has delivered all of the USU SOM lectures on Breast and Cervical Pathology, since 1986. She is a superb lecturer and was nominated for the University Medal for 18 years of outstanding contributions to the USU SOM Department of Pathology;

2004

Charles R. Mannix, J.D., Vice President for Executive Affairs, was awarded the University Medal, on March 17, 2004, by the University President. Beginning with his first appointment as USU's Assistant General Counsel, through his subsequent appointments as General Counsel and Executive Secretary to the USU Board of Regents, Mr. Mannix is recognized for his unconditional loyalty to the University, the establishment of the USU Patent Office, and his commitment to the well being of the faculty, staff, and students;

General Thomas R. Morgan, United States Marine Corps (Retired), received the University Medal, on May 14, 2004, during the USU Board of Regents meeting. General Morgan graduated from Colgate University with a Bachelor of Arts Degree in History and Political Science; he later earned a Master of Arts Degree in Counselor Education, from the University of Virginia. He was promoted to the rank of General, in 1986; served as Assistant Commandant of the Marine Corps; and, retired on July 1, 1988. General Morgan's service as a special advisor to the USU Board of Regents has enhanced the recognition of USU, its mission, and the proud heritage of military medicine; and,

James A. Zimble, M.D., President USU, Vice Admiral, United States Navy (Retired), was awarded the University Medal, on August 2, 2004, by the Chairman of the USU Board of Regents, during his retirement ceremony. In addition, Dr. Zimble was also presented with the DoD Medal for Distinguished Civilian Service, the highest civilian award presented by the Secretary of Defense; both awards recognized his leadership, medical readiness expertise, simulation technology-

oriented educational programs, and his long-term commitment to ensuring Force Health Protection and the well being of the University. As pointed out by the Secretary of Defense, because of “his vision, leadership and dedicated service, the Department can now boast of USUHS as the Academic Health Center for Military Medicine.”

The Carol J. Johns Medal.

Background. **Carol J. Johns, M.D., Professor, John Hopkins School of Medicine**, was a long-time enthusiastic and effective supporter of the University. Doctor Johns worked for the health and survival of the University in numerous ways. She served as a member of the USU Board of Regents from 1985, until her death, in 2000. A warm and gifted woman with remarkable personal humility and gentleness, Doctor Johns achieved the highest honors in academic medicine as a nationally recognized clinician, academician, and teacher. The University established an annual award in her name, the ***Carol J. Johns Medal***. The Medal will honor the faculty member whose accomplishments emulate Doctor Johns’ spirit in: furthering the welfare and excellence of the USU faculty; promoting outstanding educational programs for the students; and, advancing the reputation of the University locally, nationally, and internationally. The Carol J. Johns Medal was presented for the first time, during the 2001 USU Commencement Ceremonies. Two individuals were chosen to receive the award, during the 2002 USU Commencement Ceremonies; and, one recipient received the award, during both the 2003 and 2004 USU Commencement Ceremonies. As of April 2005, a total of five individuals have received this prestigious award.

Recipients of the Carol J. Johns Medal:

- 2001** **Louis Pangaro, M.D., Colonel, MC, USA (Retired), Professor, USU SOM Department of Medicine**, was the first individual to receive the newly established Carol J. Johns Medal, during the 2001 USU Commencement Ceremonies, on May 19, 2001. Doctor Pangaro was selected due to his internationally recognized leadership in academic medicine and his commitment to the promotion of outstanding educational programs, which are acknowledged by his on-going selection to university and national initiatives dealing with curriculum reform;
- 2002** **Rosemary C. Borke, Ph.D., Professor, USU SOM Department of Anatomy, Physiology and Genetics**, was nominated by the USU Faculty Senate for the 2002 Carol J. Johns Medal. Doctor Borke is recognized as: an outstanding educator of medical and graduate students; an innovative leader in the development and implementation of curricula; a model for faculty leadership at the Department and University level; and, an internationally recognized expert in the area of peripheral nerve injury and repair. Her involvement in, and contributions to, all aspects of USU faculty service have established a level of unsurpassed excellence that stands as a model for all USU faculty. She has demonstrated excellence in promoting outstanding educational programs, furthering the welfare and excellence of the

USU faculty, and advancing the reputation of the University locally, nationally, and internationally;

Val G. Hemming, M.D., Colonel, USAF, MC (Retired), Professor and Dean Emeritus, School of Medicine, was chosen to receive the Carol J. Johns Medal, during the 2002 USU Commencement Ceremonies, on May 18, 2002. Nominated by the USU Faculty Senate, Dean Hemming was recognized for his endeavors in research for over 20 years. His research led to an innovative treatment that prevents death and disability from Respiratory Syncytial Virus infection in vulnerable pre-term infants. During his term of service as the Dean of the School of Medicine, he continued his on-going efforts to improve and reform the curriculum of the medical school. As with the rest of the Nation, the USU SOM faced a marked reduction in the number of patients available to students during their clinical rotations. To address this concern, Dean Hemming was instrumental in the development and implementation of the USU National Capital Area Medical Simulation Center (SIMCEN), which allows the effective and efficient use of simulated patients. In addition, the SIMCEN facilitates the implementation of the latest technological and educational advances for the teaching of physicians and students. His success in this effort will guarantee the value of USU as a resource for the effective training and testing of medical students and for the continuing medical education of health care providers for generations to come;

2003

Norman M. Rich, M.D., F.A.C.S., Professor and Chair, USU SOM Department of Surgery, was awarded the Carol J. Johns Medal, during the 2003 USU Commencement Ceremonies, on May 17, 2003. Since the inception of the University, Doctor Rich has continuously provided support and encouragement to the faculty, students, and graduates of the School of Medicine. Following a distinguished Army career, his military awards include: the Legion of Merit, Bronze Star, Meritorious Service Award, and Vietnam Medals. As the first Chair of the USU SOM Department of Surgery, Doctor Rich has contributed to the international awareness of the University through his multiple memberships in elite societies and associations and the organization of on-going visits by prestigious organizations to USU. Doctor Rich was named the USU SOM Outstanding Civilian Educator, in 1983; he received the USU Exceptional and Outstanding Service Medals, in 1989 and 2001; and, he was awarded the University Medal, during 2001. In 1999, he received *The J.E. Wallace Sterling Lifetime Alumni Achievement Award* from the Stanford Medical Alumni Association; and, on October 11, 2002, the USU President announced the establishment of *The Norman M. Rich Department of Surgery*. Doctor Rich has earned international recognition for his work, lecturing in more than 35 countries; he has published over 300 manuscripts and has been the author or co-author of five books. He has held multiple leadership positions in a variety of surgical societies; he is also a member of numerous international surgical societies; and, he has received Honorary Medical Degrees and Professorships from universities in more than five countries. After 28 years at USU, Doctor Rich has succeeded in establishing an outstanding educational program for the USU SOM students; in addition, under his leadership, surgical skills laboratories, simulation training, and virtual trainers have been incorporated to provide surgical training that is recognized both nationally and internationally; and,

2004

Cinda Helke, Ph.D., Professor and Associate Dean for Graduate Education, received the Carol J. Johns Medal, during the 2004 USU Commencement Ceremonies, on May 15, 2004. Dr. Helke, a biomedical research scientist, medical educator, and academic administrator, made significant research contributions to understanding how the nervous system influences cardiovascular function in health and in diseases such as diabetes. She published over 120 research papers and book chapters, presented her research work in numerous seminars nationally and internationally, and received 22 years of continuous funding for her research from the National Institutes of Health (NIH). Her skill as a lecturer and teacher of Pharmacology to medical students at USU was recognized by many teaching awards from the students. She directed the Neuroscience Graduate Education Program, developing it into a model interdisciplinary doctoral program. In her most recent position as Associate Dean for Graduate Education, she was a constant champion for the needs of graduate students, a driving force for providing excellence in their training, and a dedicated promoter for the growth, diversity, and modernization of the USU Graduate Programs. She was born in Iowa and graduated from the Creighton University School of Pharmacy and received her Ph.D. in Pharmacology from Georgetown University, in 1978. After a postdoctoral fellowship at the NIH, she joined the USU faculty, in 1980, where she attained the rank of Professor in 1988. Her professional memberships included the American Society of Pharmacology and Experimental Therapeutics, where she served as Secretary-Treasurer; the Society for Neuroscience; the International Society of Autonomic Neuroscience; the American Diabetes Association; and, the American Association of Medical Colleges Graduate Research and Education Group. Dr. Cinda Helke died, on June 13, 2004, of cancer. She is greatly missed by her USU family.

The Curreri Award.

Background. Following his retirement as the first University President in November of 1976, **Anthony R. Curreri, M.D.,** was awarded the Department of Defense (DoD) Distinguished Public Service Award. The DoD award, presented in 1977, cited Dr. Curreri for “collaborating with the military departments and for the development of the overall objectives and goals of the University to develop and implement an educational system of the highest quality to serve the physician manpower needs of the military services.” The 1996 Graduating Class, of the School of Medicine, established the Curreri Award to recognize exceptional contributions to the continuation and well being of the University and to memorialize the leadership of Dr. Curreri as USU’s first President. Since the initial award in 1996, all of the graduating classes (SOM, GSN, and Graduate Education) have participated in selecting the recipients of this award. Doctor Curreri was awarded an Honorary Degree, posthumously, on January 10, 2002, by the USU community.

Recipients of the Curreri Award:

- 1996 **Vorley M. (Mike) Rexroad, BG, U.S. Air Force (Retired);**
- 1997 **John Dressendorfer;**
- 1998 **Lorraine B. Sanford;**
- 1999 **Charles C. Partridge, COL, USA (Retired);**
- 2000 **Enrique Mendez, Jr., M.D.;**
- 2001 **Frederic G. Sanford, M.D., RADM, MC, USN (Retired);**
- 2002 **Barry W. Wolcott, M.D., COL, MC, USA (Retired); and,**
- 2003 **The Honorable Robert E. Anderson, M.D.**
- 2004 *(The award was not presented during 2004)*

The Packard Lecture.

Background. The Packard Lecture Series was named in honor of **The Honorable David Packard** (September 7, 1912 - March 26, 1996), distinguished friend and supporter of the University. Mr. Packard was the Deputy Secretary of Defense, when USU was created in 1972. He served as the first Chairman of the USU Board of Regents; and, he was the Acting President of the University, from 1976 to 1981. Mr. Packard also served as the first Chair of the Council of Directors of the Henry M. Jackson Foundation for the Advancement of Military Medicine, for over six years. The USU Faculty Senate established the Packard Lecture, in 1985, to annually honor individuals who have made significant contributions to the military medical community; it is considered among the greatest honors bestowed by the USU faculty.

The David Packard Lecture Series:

- | | | |
|------|--------------------------------|--|
| 1985 | Enrique Mendez, M.D. | <i>Teaching Humanism to Medical Students</i> |
| 1986 | Joshua Lederberg, Ph.D. | <i>The Complexity of Biological Systems</i> |
| 1987 | C. Everett Koop, M.D. | <i>The Fight Against AIDS</i> |
| 1988 | Robert Petersdorf, M.D. | <i>Some Issues in Graduate Medical Education</i> |
| 1989 | ADM James Watkins, USN | <i>AIDS, The Political, Ethical and Social Aspects</i> |

1990	Arnold Relman, M.D.	<i>Scientific Misconduct</i>
1991	VADM James A. Zimble, MC, USN	<i>Navy Medicine Goes to War, A Time For Evaluation, Reflection and Discussion</i>
1993	Philip R. Lee, M.D.	<i>Re-Inventing Public Health</i>
1995	David A. Kessler, M.D.	<i>Accelerating Approval for Drugs for Serious and Life Threatening Diseases</i>
1996	Joseph A. Califano, Jr.	<i>Radical Surgery: What's Next for America's Health Care</i>
1997	Michael DeBakey, M.D.	<i>History, the Torch that Illuminates Lessons from Military Medicine</i>
1998	Francis D. Moore, M.D.	<i>New Kinds of War: New Kinds of Peace</i>
1999	Senator Nancy Kassenbaum Baker	<i>The Federal Advisory Committee on Gender Integration Training and Related Issues</i>
2000	David P. Stevens, M.D.	<i>The Future of Medical Education: Bytes, Ticks and Finding Your Way</i>
2001	Wayne T. Hockmeyer, Ph.D.	<i>Perspectives in Biotechnology</i>
2002	Kenneth M. Ludmerer, M.D.	<i>The Coming of the Second Revolution in Medical Education</i>
2003	(Not Presented During 2003)	
2004	Kenneth I. Shine, M.D.	<i>Advances in Crossing the Quality Chasm</i>

TEACHING AND RESEARCH SUPPORT

Background. The activities organized under the Office of the USU Vice President for Teaching and Research Support (TRS) were originally established as part of the School of Medicine (SOM). As the University's activities and programs expanded to include the Graduate School of Nursing, Continuing Education for Health Professionals, and the Armed Forces Radiobiology Research Institute, it became apparent that the central support functions of TRS were no longer limited to the SOM. As a result, the TRS activities were moved from responsibilities designated to an Associate Dean, in the SOM, to a University Vice President. As this evolution occurred, it was also determined that these activities should be called Centers to more accurately reflect their missions as central resources for USU. The TRS Centers, during 2004, included: the Audio Visual Center; the Center for Multidisciplinary Services; the Learning Resource Center; the Center for Informatics in Medicine; the Center for Laboratory Animal Medicine; the Center for Environmental Health and Occupational Safety; and, the Information Services Management Center.

The Audio Visual Center.

Pictures are stored and recalled by the mind, instantaneously and intact without reprocessing, therefore, providing more effective and complete information retention and recall. By contrast, text-based information is converted by the mind from a language-base into conceptual ideas for retention, and later converted back to a language base for recall as text or voice.

- **Ralph Norman Haber**, *How We Remember What We See*, Scientific American Magazine, Volume 222, Number 5, May 1970, page 105.

The USU Audio Visual Center (AVC) functions as an essential teaching and research support resource for the USU faculty and staff. It provides support for education and research in the form of medical illustration, computer graphics, still photography, video, multimedia products, and consultation services. ***The Medical Photography Branch*** provides professional photographic services to include: patient photography in a clinical setting; gross specimen photography for Pathology and Anatomy studies; documentation of research projects; and, coverage of University events for public affairs programs. Photographic laboratory services include: custom printing; film processing support; digital image enhancement; traditional slide duplication; flat art copy; small object studio subjects; and, portraiture services. ***The Computer Graphics Branch*** provides graphic art services for charts, graphs, and text of medical/scientific information in journal publication, poster session displays, and 35 mm slides for classroom presentations. Detailed original medical illustrations in full color, or line drawings, are prepared to supplement teaching programs, accompany articles for publication, or illustrate research displayed in poster sessions. A variety of products are designed for Internet and electronic delivery in support of medical education and training programs. Signs, forms, brochures, logos, books, covers, folders, and flyers are also produced in support of academic and administrative functions. ***The Medical Television Branch*** provides studio and remote video tape recording and broadcast services. Extensive editing, titling, and duplication are provided in support of laboratory demonstrations, field exercise documentation, and classroom lectures. Multimedia (CD-ROM/

DVD) production and web page design are also available to enhance course materials and for the distribution of University information.

Support for CFC and other USU Activities. For the seventh time, the USU AVC has received a Department of Defense award for its poster design. This year, the USU poster was awarded second place, in the motivational category. The entry was created by **Mr. Wayne Crawford, Director of the AVC.**

Support for CD-ROM Production. For the third time, in collaboration with the USU Vice President for Administration and Management, AVC developed a CD-ROM version of the *2003/4 Edition of the USU Journal*; the CD-ROM was designed in-house, and replicated through the use of a DoD contract. The electronic format of the USU Journal provides direct and searchable access to the wealth of information provided in the annual edition of the USU Journal. Copies of the *2003/4 Edition of the USU Journal*, in CD-ROM format, were provided to the 329 members of the USU faculty, the USU Board of Regents, the Surgeons General of the Uniformed Services and their immediate staffs, the Commanders of Military Treatment Facilities, throughout the Defense Health Program, the Congress of the United States, and many others; it was also placed on the USU Web Site.

Medical Simulation. AVC is continuing to provide support to the National Capital Area Medical Simulation Center, specifically for its proposed *Wide-Area Virtual Environment (WAVE) Concept*. This project is being designed to simulate real medical environments including bioterrorist attacks, hazardous material spills, and urban warfare.

Digitization. AVC is involved in the digitization of the Department of Surgery's resource archives, including a large collection of 35mm slides and video tapes. This effort will result in providing the Department and USU with immediate access to an extensive library and cost-effectively eliminate the need for future slide and video tape duplication.

Bioterrorism Support. AVC continues to support the University's efforts to combat bioterrorism and weapons of mass destruction threats by documenting and developing support materials designed to educate uniformed and civilian public health communities.

Archiving of Historical Images. Throughout 2004, the Office of Teaching and Research Support, in conjunction with several USU activities, continued the development of a digital archive of historical images for the University. An annotated database of USU's historical images commenced with significant images related to the University's Board of Regents. Thousands of images have been viewed, evaluated, edited, digitized, captioned, catalogued by subject matter, and archived. The current effort is focused on images from twenty-five years of USU commencement exercises.

Center for Multidisciplinary Services.

The existing general facilities for teaching are excellent. Teaching and research support activities are providing a high quality of service to both academic departments and administrative/support activities.

- *Institutional Resources*, Chapter III, USU Self-Study Report to the Commission on Higher Education of the Middle States Association of Colleges and Schools, prepared for the 2003 Site Visit, page III-12.

On-Going Renovation, Upgrades, and Support for the USU Teaching Mission. By 1996, the USU Center for Multidisciplinary Services (MDL), the USU Faculty Senate, the Offices of the Deans of the SOM and GSN, and the USU President were aware that the teaching tools available in the lecture halls and auditorium required major renovation. Based on surveys of students, faculty, and staff, an engineering design was commissioned to upgrade the equipment; the project was then expanded to include the replacement of both carpeting and seating. The Office of the Vice President for Teaching and Research Support and MDL successfully coordinated a major renovation of the teaching tools in the Sanford Auditorium and the USU lecture halls, during 1998 and 1999. Since then, and throughout 2004, subsequent upgrades of the teaching facilities have been on-going, to include a major purchase of tables and chairs for the teaching classrooms, in September of 2001; and, the obligation of funding for the renovation of Lecture Rooms A and B, during 2003.

Renovation of USU Lecture Halls. All of the USU lecture halls have been designed with the same equipment and controls so that instructors and students can learn one system and move from one lecture room to the next, without having to adjust to unfamiliar teaching tools. The upgraded equipment provides the faculty with a broader range of teaching tools to present their material. On-going upgrades include: 1) the installation of upgraded audio and projection equipment; 2) the provision of computer capability and Internet access; 3) enhanced video capabilities in each room, to include in-house cameras for overflow viewing throughout the campus; and, 4) *smart* classroom capabilities in Lecture Room C, to include video-conferencing and a state-of-the-art audience response system. A majority of these upgrades took place, during the summer of 1998; and, equipment installation occurred around class schedules, throughout 1998 and 1999. Similar upgrades are also being planned for the Board of Regents Conference Room, selected conference rooms, throughout the campus, and the Multidisciplinary Laboratories.

Upgrade of USU Conference and Laboratory Rooms. In September of 2000, resources were identified to obtain computer and video projector equipment to upgrade the major USU conference rooms with systems similar to those available in the lecture halls; this upgrading process continued, throughout 2001. During 2002, the MDL procured and integrated eight new LCD projectors for use in the USU laboratories and conference rooms. Because many USU departments have increased their use of computer presentations, during laboratory exercises and lectures, the MDL has been increasing its state-of-the-art computer projection equipment for use by the USU community. This has allowed the instructors greater flexibility in selecting the teaching modality for presenting material to the students. In fact, the MDL ordered sufficient LCD projectors to permanently install one in each teaching area and increase user capability, throughout the USU laboratories and conference rooms; this upgrade was completed, during 2003.

During 2004, **MDL completed the engineering design phase of an upgrade of the conference and laboratory rooms**, to include the Anatomical Teaching Laboratory (ATL), similar to what has been accomplished within the lecture halls; the proposed upgrade would improve the audiovisual capabilities of each room and would allow flexibility for future requirements as designed in the lecture halls. The control system would also allow the instructors to control various aspects of the audiovisual support, as well as, allow for future upgrades to the equipment. **The proposed changes to the laboratory spaces also include the flexibility to divide the rooms, which would enable MDL to meet the increasing requirement for small group teaching. In addition, the engineering design would allow the ATL to more efficiently handle multiple teaching requirements, as well as to broadcast dissection demonstrations and other visual teaching aides to the lecture halls.** All of these activities are in compliance with Goal 5, STEWARDSHIP, of the USU Strategic Plan. By upgrading the lecture halls, classrooms, and the auditorium, USU has enhanced its ability to: *provide a quality educational environment for its students, faculty, and staff; conduct continuing medical education; and, sponsor military medical conferences for the MHS in a manner that will enhance the reputation of USU as a premier health sciences academic institution.*

Renovation of the Anatomical Teaching Laboratory. In 1998, it was identified that the working and storage areas and the freezers in support of the Anatomical Teaching Laboratory (ATL) required significant renovation. Following coordination by the Vice Presidents for Administration and Management, Resource Management, and Teaching and Research Support, funding was identified, in September of 2001, for the renovation of the working and storage areas and the replacement of the ATL freezers. Following extensive consultation and planning, by the USU Facilities Division, the Anatomical Curator, and Navy Facilities (NAVFAC), the renovation project began, in December of 2001, and was successfully completed, during 2002. During 2003, designs and cost estimates were coordinated with the USU Facilities Division, the Anatomical Curator, and NAVFAC to upgrade the air handler unit that services the anatomical teaching laboratory; resources were identified and the project was funded, at the end of 2003. During 2004, MDL, the USU Facilities Division, and NAVFAC completed the planning phase for the installation of the new air handler and associated duct system; the entire project was completed, as scheduled, by May of 2005.

Computer Upgrades. In the past, the University utilized oscilloscopes and chart recorders to facilitate the teaching of physiological changes, due to disease and treatment, in the first-year teaching laboratories. These units were failing and replacement equipment was becoming increasingly unavailable. Following the identification of the need to replace the twenty-five-year-old system, **MDL planned, justified, secured funding for, purchased (during 2000), and installed (during 2001) a system of computer-based teaching workstations at each of the first-year laboratory tables.**

Since the installation of the computers in the teaching laboratories, the USU SOM Department of Anatomy, Physiology and Genetics (APG) has utilized the new resource for laboratory exercises. The students learn to monitor their heart rates and to run a series of experiments studying the changes in heart rates. Once students have become familiar with the basic operation of the equipment, it is used in the advanced cardiac physiology laboratory exercises. Both of these teaching laboratories have been judged to be quite successful by the students and faculty. **Currently, APG utilizes the computers in three of its four teaching blocks; and, the Department requests utilization for the remaining fourth block, during 2005.** While the computers were purchased primarily to replace the physiological recorders mentioned above, they have become a source of greatly expanded, computer-assisted, teaching applications, in a variety of disciplines.

Through the utilization of the centralized and networked controls of this computer system, a wide variety of demonstrations, laboratory simulations, experimental exercises, and testing procedures are currently being used, or are under development for expanded use, by multiple SOM Departments. These demonstrations, simulations, exercises, and procedures have been found to provide cost-effective, true-to-life, experiences for students that were not formerly available; and, they have been so successful that plans have been made to duplicate the system, throughout the second-year student laboratories. The MDL has received requests from Biochemistry; APG; Neuroanatomy; Microbiology and Immunology; Pharmacology; and, Radiology and Radiological Sciences for the expanded use of this equipment in their laboratory exercises; ***the two Departments of Pharmacology and Microbiology and Immunology began using the computers in their teaching exercises, during the past year. Additionally, this equipment is planned for use in computer-based testing applications;*** the Pathology Department was the first to utilize the computers for the testing of medical students. Based upon Pathology's success, APG also began using the computers for testing, during the past year. ***And, the students use the computers as an additional study resource for reviewing class materials and presentations and to prepare for the National Board Examinations.***

During 2002 through 2003, the MDL replaced the computers used for presentations, throughout all of the USU lecture halls; and, in 2003, the University leased an additional fifty computers for use throughout the MDL. These, added to the original fifty, have significantly increased the capability for the instructors to use a broad range of tools for instructing USU students. During 2004, the MDL began replacing the computers used for presentations in the conference rooms.

Scheduling of Room Requests for the University. Throughout 2004, the MDL managed and supported over 3,000 room requests for teaching and meeting requirements; many of which were for multiple rooms over numerous timeframes. Support was provided by the MDL staff for several international conferences and workshops. In addition, there was an increase in teaching room requirements for small group teaching space, which necessitated MDL's use of a wide variety of space in meeting those needs. The MDL continues to provide top-notch service to faculty, students, and staff at USU and to meet the needs of the military medical community for space and teaching support.

The Learning Resource Center - Globally Available.

The Learning Resource Center staff is highly trained and knowledgeable and is responsive to the needs of students and faculty... The LRC staff is effective in meeting the changing demands of the University community. *They have blended the traditional print resources with the electronic versions to achieve a broader scope of information that is accessible worldwide.* The growing collection of unique web-based resources will enhance the University's position in the academic world.

The physical library is well maintained and cataloged. In conjunction with its mediated database and interlibrary loan services, it provides ready access to biomedical and clinical information in support of educational programs. A variety of computerized web-based resources supports information retrieval and management, and offers students opportunities for self-paced learning. The LRC has also made a strong commitment to working in teams with the academic departments to develop programs and services to better serve its user populations.

- *Institutional Resources*, Chapter III, USU Self-Study Report to the Commission on Higher Education of the Middle States Association of Colleges and Schools, prepared for the 2003 Site Visit, page III-14.

World-Wide Access for Health Sciences Information. The Learning Resource Center (LRC) ensures that students, faculty, alumni, and other members of the USU world-wide community can continuously access current medical information, twenty-four hours a day, seven days a week, through its electronic knowledge-based resources. LRC customers are provided immediate access to material on new or alternative treatments, diagnostic tests, background information for a student's case presentation, practice of evidence-based medicine, or a literature search in preparation for a research article or grant, whether or not the LRC is open.

Since its establishment, the LRC has succeeded in providing both an outstanding learning environment and state-of-the-art educational tools for the USU students and faculty. Following the retirement of **Chester J. Pletzke, Founding Director of the USU Learning Resource Center**, during 2002, a Nation-wide search was conducted by the University. In mid-November of 2002, **Ms. Ursula Scott was selected as the Assistant Vice President for Learning Resources.** In this position, Ms. Scott focuses on the LRC's Extramural Program and outreach projects; **Ms. Janice Powell Muller serves as the Director of Campus Learning Resources.**

Throughout 2004, the LRC continued to ensure that its electronic resources were globally accessible; the LRC assisted 7,980 registered customers by making current, medically-related information available, via the Internet. Unique gateway software enabled users to access on-line health care information from Kosovo, Japan, Iceland, Bosnia, Germany, Italy, the United Kingdom, Turkey, Saudi Arabia, on board ships traveling around the World, and from sites located throughout the United States. Selected examples of the LRC customer base include: all four classes of USU medical students; USU alumni; Graduate School of Nursing students; distance learning students; USU faculty, both on and off campus; nurse practitioners and registered nurses throughout the Military Health System (MHS); and, the Office of the Secretary of Defense. *In 2004, 7,980 users requested 5,400,000 pages.*

User-Friendly Access.

The Learning Resource Center is noted as one of the best assets of the University by both faculty and students. A recent faculty survey revealed the majority of both on- and off-campus respondents to be satisfied or very satisfied with library services. Students are consistent in their praise of the facility and of the accessibility and helpfulness of the staff.

- **Report of the Evaluation Team, Commission on Higher Education of the Middle States Association of Colleges and Schools, April 2, 2003.**

The LRC's Physical Plant Has Continued to Evolve.

- ***Copyroom Established.*** Following the relocation of the circulation/information desk to the front entrance of the LRC, during 2003, the former site was enclosed and transformed into space for the LRC photocopiers and microfilm/microfiche reader/printers. Copiers, which had formally occupied an open area across from the circulation desk, were moved inside a newly constructed copyroom. Enclosing the copiers successfully prevents noise from escaping into the library, and LRC patrons can now research and study in a quiet environment.

- ***Elevator Renovation.*** In the late Fall of 2003, and continuing into the early Spring of 2004, the LRC's aging elevator was renovated. Patrons can now be assured that they can travel smoothly and safely between the floors of the library.

- ***The Construction of a New Office.*** An office was constructed, in early 2004, to provide the Assistant Vice President for Learning Resources with space to focus on the LRC's Extramural Program and projects.

Interlibrary Loan. The number of materials requested from other libraries for USU patrons has steadily increased. ***During 2004, 3,795 articles or books were requested by the LRC from other libraries,*** which is an increase of 995 items over 2003 (*in 2003, there was an increase by 1,100 items over requests made during 2002*). This increase can be explained by the ease of ordering documents through *PubMed* via *LoanSomeDoc*. The LRC's focus on patron education, through outreach programs and instruction, has resulted in the LRC customers becoming more cognizant of the materials available both at the LRC and at other libraries. The LRC continues to be a member of ESE/A, a consortium of *Docline* libraries in the National Network of Libraries of Medicine Southeastern/Atlantic Region, which provides free, electronic delivery of interlibrary loan documents, within 48 hours. ***The LRC is pleased to report that most loans are filled within a four to six hour window,*** with a high percentage of the items being scanned and electronically filled.

The LRC filled 5,212 requests from other libraries for books and journal articles, in 2004, which is slightly less than the 5,358 requests filled in the previous year. Requests are generated from local hospitals, universities, and medical schools, as well as the National Institutes of Health (NIH), the Walter Reed Army

Medical Center (WRAMC), and military medical facilities around the world. The LRC is also able to reach many physicians, nurses, students, and patients by providing requested medical articles through their local, medical, or public libraries.

Reference Services. The LRC reference services were greatly expanded, in 2004. *A new user education/reference librarian enabled the LRC Reference Department to expand the types of classes and instruction, which were provided to over 1,050 patrons, during 2004.* A series of **Brown Bag Sessions** were instituted with classes in *EndNote* and *PubMed* being taught each month; other Brown Bag Sessions included: *EndNote Special Features*; *Alternatives in Animal Research*; *Search Strategies*; and, *Introduction to LRC Resources*. USU librarians coordinated the celebration of **Health Literacy Month** with their counterparts at the National Library of Medicine by presenting a lecture on the *Medline Plus Database* at the LRC. *The reference librarians also taught seven classes to Patient Safety Officers from the Department of Defense on the use of the LRC's Remote Computer Services*, which included going off-site for one of the sessions. A class on *Evidence-Based Public Health Resources* was also presented to graduate students studying public health.

This year, the LRC reference staff conducted a tour and provided an introduction to the LRC resources for the in-coming Graduate School of Nursing (GSN) students. The staff's commitment to user education resulted in a three-hour *Class on LRC Resources and Search Strategies* provided to GSN students in Research Methods. Classes were also taught on *Literature Searching* and *EndNote* to graduate students in Preventive Medicine and Biometrics (PMB). In addition, a special *Class on PubMed and LRC Resources* was taught to summer interns associated with the USU Center for Health Disparities Research and Education.

The LRC took an active role in the University's Research Day by assembling a booth and providing materials on the library's information resources to the participants. The first **LRC Faculty/Staff Open House** was hosted, during 2004, with over 50 USU faculty and staff in attendance. During the Open House, the staff showcased the LRC's new web page and presented sessions on *LoanSomeDoc*, *Current Contents Connect*, and searching *MESH/PubMed*. In addition, the reference librarians attended staff meetings in the USU SOM Departments of Medicine and Surgery, in order to showcase the LRC resources and new products.

The reference staff assisted in redesigning the new LRC web page and developed several instructional modules, including a *viewlet* on ordering documents through *LoanSomeDoc*, which were added to the web page. The Reference Department also participated in the SOM's second-year *Bioethics Class* by facilitating discussions and working with students on finding resources for their papers. Reference guides were created for the GSN on: *Genetics and Cystic Fibrosis and Women's Health* and placed on the LRC's web page. A reference guide was also created to help researchers conduct literature searches; and, several literature searches were performed for researchers preparing animal protocols.

Remote Computer Services. Since its establishment, the LRC continues to diversify and update its resources to meet its customers' changing requirements. New proxy technology improved the reliability and compatibility of remote access to the LRC's electronic collection. *This same proxy technology was extended to provide customized journal collections to partnering institutions and affiliates. Selected journals, once restricted to campus, became available remotely.* Remote Services added support and instructions tailored to various browsers. The Remote Services administrative databases were redesigned; as a result, better reporting functions offer administrators improved usage data for making decisions.

Electronic journals are now more directly linked to content than ever before, thus saving search time for the customers.

Computer Classroom/Laboratory. The LRC's computer classroom provides 40 workstations, to include an instructor's station. When it is not being used for classes, the laboratory is utilized by individual students for assignments and electronic activity. ***The LRC Computer Classroom hosted 4,215 students, with 414 contact hours, during 2004, with twenty to thirty sessions per month.*** LRC staff reserve, prepare, and provide technical assistance for these classes. The classroom was used for academic instruction with hands-on practice by the following USU activities: 1) Departments and Programs in the SOM (Biomedical Informatics; Dermatology; Family Medicine; Medical and Clinical Psychology; Molecular and Cell Biology; Pharmacology; and, Preventive Medicine and Biometrics); 2) the Graduate School of Nursing; 3) Faculty Development; 4) Contracting; 5) the Learning Resource Center; 6) Finance; and, 7) University Information Systems. In addition, the Graduate School of Nursing and the SOM Departments of Pathology and Dermatology made extensive use of the classroom for on-line examinations and quizzes.

Library staff members taught sections in *Introduction to Computers for Molecular and Cell Biology, Computer Fundamentals for Master of Public Health, Nursing Research, Educational Methods, PubMed*, and numerous faculty development seminars and student, faculty, or staff orientations. In addition to the computer classroom, there are approximately 50 additional computers available in the LRC for student and faculty use. While the majority of computers are PC's, the LRC does provide 23 MacIntosh computers. There are heavy-duty printers, scanners, and CD burners, along with special software packages, which can also be used for educational purposes.

Microcomputer Help Desk. Members of the LRC's Applied Medical Informatics Branch staff the help desk. They answer technical questions in-house, on the telephone, and from e-mails sent by clinical faculty, students, and researchers on assignments around the World. The help desk not only supports the computers in the LRC, but also provides assistance to patrons experiencing problems related to the Remote Computer Service. The help desk is part of an effort to provide extraordinary customer service, as well as, to assist students in becoming *computer literate*, as appropriate.

Internet Information Resources During 2004. Throughout 2004, the LRC staff continually updated and refined the RCS database, which gives thousands of patrons access to electronic medical and military resources, over the Internet. With nearly 7,000 electronic books, journals, and databases available to LRC users, making certain that all links are accurate, and holdings are complete, requires extensive manpower.

1) ***Books.*** Standard textbooks are available in all major medical specialties. All electronic editions are constantly updated; and, thus provide the most current information for the practice of health care. ***Currently, there are more than 308 full-text electronic books available, through the LRC.*** These include such familiar titles as: *Harrison's Principles of Internal Medicine; Scientific American Medicine; Cecil's Textbook of Medicine; Current Medical Diagnosis and Treatment; Sabiston's Textbook of Surgery; Conn's Current Therapy; Nelson's Textbook of Pediatrics; Merritt's Textbook of Neurology; Griffith's 5 Minute Clinical Consult; The Washington University Manual of Medical Therapeutics; Campbell's Urology; and, Danforth's Obstetrics and Gynecology.*

2) **Journals.** Conversion to the electronic editions of health-related journals, or periodicals, continued throughout 2004. ***The LRC currently has 7,000 journal titles available on-line, in full-text, to assist its users.*** Publishers continue to expand their on-line offerings; and, the LRC provides access to as many of these as possible. Some titles are subscribed to individually, but most are accessed through collections including: *Elsevier's ScienceDirect; Blackwell's Synergy; Ebsco's* various medical and nursing collections; *Kluwer; Gale; Ovid;* and, *Wiley*. In addition to titles from which the RCS user can download articles at his own computer, there are hundreds of titles from which articles are printed on a pay-per-view basis by an LRC staff member. The LRC has access to hundreds of titles from a growing list of providers: *Docurights; Ingenta; Taylor and Francis; Sage; Karger; Ovid; Highwire Press;* and, *Springer*. ***By offering articles to the less frequently used journals on a pay-per-article basis, the LRC has managed to preserve access to the more heavily used titles, despite continued price increases.***

3) **Databases.** The LRC's ***Remote Computer Services (RCS) offers access to approximately 80 electronic databases and other resources for research and learning.*** In 2004, the LRC expanded access to the extremely popular *UpToDate* database, to include two years of residents. Access was continued to such vital medical resources as: *MD Consult; Micromedex; PsycInfo; Medline; CINAHL; Evidence-Based Medicine Reviews; HaPI;* and, *Current Contents*. *Tomes Plus* has been added to the LRC *Micromedex* subscription. The LRC discontinued its use of the *Knowledge Finder* search engine, but added enhanced support for *PubMed* and *Ovid* search tools. Students can prepare for their Medical Boards by using *Exam Master USMLE Step 1, 2, & 3* programs, which simulate the tests that they will experience.

Archival Collection for Preserving the University's History. The primary functions of this LRC branch are: to preserve, arrange, and describe items of significance to USU history and rare collections; and, to provide world-wide access to key documents for research, via the Internet. With the advice and financial support of senior management, along with **Val Hemming, M.D., Professor and Dean Emeritus, USU School of Medicine,** and the USU SOM Department of Medical History, the LRC continues to make great strides in implementing an archival program for the University. The Archival Collection has received donations from USU faculty members and administrators, since its establishment. These collections provide invaluable historical information on the significant activities of USU and include materials from **James A. Zimble, M.D., Past President of USU,** USU Faculty Senate minutes and papers, select AFRRRI papers, USU Graduation information, and other sources. A significant collection of papers from the Society of Medical Consultants of the Armed Forces (SMCAF) was also obtained; it includes meeting minutes and materials, as well as the papers and oral histories from prominent members of SMCAF. Standard archival procedures for organization and storage are employed; documents are stored in acid-free document cases, ensuring their availability for future researchers. Search aids, including the use of specialized computer databases, will facilitate easy access for future researchers; holdings currently consist of 70 linear feet of space.

A Digital Archival Collection. A significant accomplishment of the LRC Archival Collection was the development of a digital archival system. This program was first conceived, during the Summer of 1999; and, it has grown into an expanded electronic collection of over 200 historical documents available through the LRC web site.

Historical military medical government documents already owned by the LRC are being scanned into *Adobe's Portable Document Format (PDF)* for universal use. When possible, *Optical Character Resolution (OCR)* is being used to make the documents fully searchable, in both MacIntosh and PC format,

while maintaining the page format of the original. This special project includes documents from the Civil War through the Korean War.

In addition to historical documents, USU theses and dissertations have been digitized. Graduate School of Nursing theses, written since 1998, and SOM Graduate Education dissertations and theses, written since 1997, are the first to be included. Any current, or former students, who have written theses or dissertations for USU, are encouraged to submit an electronic format of their work to the LRC archival collection. It will be converted to PDF format and placed on the web site. ***Thus, world-wide access to the research findings of USU students will be available, which will showcase their work. To date, there are over 225 theses and dissertations on-line.***

This year, the Archives began digitizing ***Editions of the USU Journal***, which are currently available in PDF format, going back to 1994. The file sizes for these documents have been reduced to the smallest possible size without significant reduction in quality for faster download. The LRC will also be adding more University-related documents, throughout the year, making many of the important University documents globally available, twenty-four hours a day, seven days a week. All of these items will be linked from the Archive's web site for ease of access.

The Archives also maintains a bibliographic database of the USU faculty publications, which is updated weekly and goes back to 1974. Currently, there are more than 14,000 journal and book citations in the database. All of the LRC electronic resources are available at <http://www.lrc.usuhs.mil/scripts/pli/lrcsub.cgi?P=archives>.

FACTS.

Collections:

<i>Print Volumes</i> (Book and Journal)	150,863
<i>Electronic Book Titles</i>	308
<i>Print Journals</i>	760
<i>Electronic Full-Text Journals</i>	7,000
<i>Audiovisuals</i>	43
<i>Educational Software</i>	65
<i>Electronic Databases</i>	530

Learning Resources Center - Extramural Activities.

National and International Visibility for the LRC. The visibility of the University and the LRC was greatly increased within the military libraries and the medical library communities, during this past year. In February of 2002, **Ursula Scott, Assistant Vice President for Learning Resources**, was elected to serve a three-year term, beginning in May of 2003; she served, or will serve, as Chair-Elect (2004), Chair (2005), Past Chair (2006) of the Federal Library Section of the Medical Library Association (MLA); she is also active in other national organizations. Ms. Scott is a member of the National Program Planning Committee for several section programs of the Medical Library Association 2005 Annual Meeting. Additionally, in collaboration with the National Library of Medicine, she is involved in planning an all-day continuing education seminar, ***The Role of Information Services for Emergency Preparedness and Response***, to be held in San Antonio, Texas, in conjunction with the Annual Meeting of the MLA.

The visibility of the University to military librarians was increased with the extension of an invitation to host the Military Librarians Workshop, at USU, in 2007. This workshop will consist of a one-week conference, including training classes, of the Military Librarians Division of the Special Libraries Association. In addition, during May of 2004, a group of military medical librarians visited USU, the Patient Simulation Laboratory (PSL), and the LRC. This tour was in conjunction with the Medical Library Association Meeting held in Washington, D.C. And, Ms. Scott coordinated the local hosting of a Webcast from the Medical Libraries Association, ***Tips for Negotiating Electronic Licenses***; it was attended by both librarians and contracting officers.

The library has expanded its national presence by joining a number of organizations and associations. The *BioMed Central* membership allows any researcher or student, at USU, to publish an unlimited number of research articles in journals published by *BioMed Central*, without paying article processing charges. The LRC joined the Association of Academic Health Sciences Libraries (AAHSL), which is comprised of libraries of accredited United States and Canadian medical schools belonging to the Association of American Medical Colleges (AAMC). Ms. Scott also submitted statistics of the LRC to the *Annual Statistics of Medical School Libraries in the United States and Canada*. The LRC, or individual staff members, have continued membership in the Medical Library Association, the American Library Association, the Special Libraries Association, *FEDLINK*, *OCLC*, and a regional consortium, *Palinet*. And, significantly, the LRC has continued as a full member of the National Network of Libraries of Medicine, which is sponsored and supported by the National Library of Medicine.

Support to Military Medical Libraries and Institutions. The LRC has a program to provide access, for medical and research personnel from United States military agencies, to electronic knowledge-based information, via the LRC's Remote Computer Services (RCS). This allows members of these groups to do their work better, faster, and more efficiently, because they have access to the most current information, via a single interface. This enables libraries and groups, which do not have technical computer staff, to access their own subscriptions, through customized web pages and interactive databases. Registered members of these groups have individual IDs and passwords for accessing their electronic books, journals, and databases.

Two new features were added for the Affiliates. ***This year, usage statistics began to be regularly provided, on a quarterly basis, to the LRC Affiliates.*** Each library Affiliate now has its own library information displayed on the opening RCS page, to include the telephone numbers of its major service areas, hours of service, and web site.

In 2004, *great strides were made to develop new business procedures; these were coordinated with the staff of the USU Vice President for Resource Management. New dynamic spreadsheets were developed to provide the Affiliate libraries with information about their subscriptions and related costs.* Most subscriptions and receipt of funds were included through a cycle process, which enhances the coordination of contracts for the Affiliates and the LRC, and facilitates efficient coordination between the LRC and the USU Offices of Contracting and Financial Management.

Another advancement was the revision of the wording and format of the Memorandum of Understanding, which will be used for work performed for the Affiliates; a formal business plan was also developed. This occurred due to requests for service from Navy Medicine and the Naval Hospital in Naples, Italy. The structuring of the proposal to Navy Medicine was a departure from previous proposals due to the large number of individuals requesting service, which required new methods for conducting business; these proposals were unsolicited. *Knowledge of the usefulness of the system is spreading; the challenge, during the past year, included dealing with vendor license agreements for both USU and the Affiliates.*

One of the major projects, during 2004, was to obtain a site license for the *New England Journal of Medicine*, one of the best-known medical journals. The site license could include the entire Department of Defense. Technical issues had to be worked out to ensure that access was as seamless as possible for the user and to restrict labor requirements for the LRC staff. *To date, the Army and Air Force have joined in sharing the cost of this license, which has expanded the visibility of USU within all of the military medical Services.* As a service to both the Affiliates and USU patrons, several web pages were developed. The *News* and *Travel* pages link to both major news and government sites. The *News* page includes links to the Food & Drug Administration, the Centers for Disease Control and Prevention, the *Federal Register*, military newsletters, and USU news pages.

The Naval Medical Center, at Portsmouth, the Medical Services of the Department of State, and Partners for Peace Information Management continued their agreements to compensate USU for enabling their members to use the USU RCS for accessing electronic resources; researchers at these facilities were better able to collaborate with USU faculty, through common access to electronic knowledge-based resources. Other military groups, associated with USU, are the interns and residents of the National Capital Consortium (NCC), the DoD Patient Safety Officers, and members of the Pentagon Force Protection Agency; these groups also gain access to electronic resources, via the USU RCS.

As the number of resources increase, USU is becoming an integral part of the knowledge operation of the Affiliates being served. The Walter Reed Army Institute of Research (WRAIR) and the United States Army Medical Research and Materiel Command (USAMRMC) continue to increase the number of resources accessed through the RCS. *WRAIR, USAMRMC, and USU each save funding by jointly purchasing subscriptions and/or jointly negotiating with the vendors. Through their affiliation with USU, both USAMRMC and WRAIR are able to share in electronic purchases; thus, members from all three organizations receive a broader group of electronic books and journal articles.*

Informatics - An Expanding and Essential Component of Education in the Health Sciences.

Background. Efforts in computer-assisted instruction as a study aid for USU students have been ongoing, since 1979, when a series of medical students developed, in Apple Pascal, the first drill and practice question bank within the SOM. Course directors provided questions entered into the University Board Review System. In succeeding years, several departments (*Biochemistry, Pathology, Pharmacology, and Physiology*) developed their own on-line examination archives or examination item databases, which have been well received by the students. Over time, this type of material was delivered to students first on stand-alone computers, then on networked computers (*HyperPharm, HyperRenal, and others*) and most recently as world-wide-web (WWW) based sites accessible, both inside and outside, of the University by students in the SOM Departments of Biochemistry, Pathology, Pediatrics, Pharmacology, and Physiology and the GSN Master of Science in Nursing (MSN) students. One of the most ambitious of these efforts has been the Biochemistry question database of examination questions for testing, which was developed between 1991 and 1996. This archive is available at <http://bob.usuhs.mil/biochem/exams/exams-f.html>.

Innovative Web-Based Study Aids, Teleconferencing Sessions, Exercises, and Course Administration. Image-based study aids have been developed by the USU faculty. The earliest of these efforts were Radiological Anatomy, Neuroanatomy, and Chest Film Review laser disc programs developed and deployed, between 1985 to 1995, by the Department of Radiology and Radiological Sciences. In 1996 and 1997, this material was also made available to students as CD-ROMs; and, in 1997, the material was migrated on the WWW at <http://rad.usuhs.mil/rad/edu/edu.htm>. ***The Department of Radiology and Radiological Sciences has established collaborative efforts with faculty at the Mayo Clinic Foundation and Emory University, which provide USU medical students access to the Visible Human data set.*** Both SOM and GSN students utilize this resource. Another effort encourages the students to draw correlates between anatomy, physical diagnosis, clinical neurology, and radiology.

USU uses interactive, real-time video teleconferencing to link five different sites for its six-week ***Clerkship in Obstetrics and Gynecology***. In sessions that last from 60 to 150 minutes, site coordinators meet with the clerkship directors and administrative personnel to discuss such crucial issues as curricula, student problems and evaluation, and faculty development. Since the sessions began, in May of 1998, USU has found that the sessions enable the standardization of curricula, facilitate the sharing of ideas, reduce administrative tasks through centralized support, and improve the meaning, consistency, and level of detail in student evaluations. (*See Section II, Third-Year Curriculum for additional information.*)

The ***Physiology Course*** (*Graduate Education and SOM first-year students*) provides an acid/base game in which students diagnose an acid/base disorder from patient data on a Davenport diagram, treat the disorder, and see what the treatment does to the patient. Other exercises include body fluid compartments and Yannet-Darrow diagrams, and the control of glomerular filtration, T_m and the countercurrent mechanism. These exercises are treated as a regular laboratory in the course. The ***Pharmacology Course*** (*Graduate Education, GSN, and SOM second-year students*) has included a computer-based pharmacokinetics simulation exercise and a computer-based drug information exercise, as integral parts of the course for the last 17 and 12 years, respectively. These exercises, designed by USU faculty, are conducted individually by students or in small groups in the Learning Resource Center (*Nurse Anesthesia, Graduate Education, and SOM second-year students*).

Over the past seven years, on-line quizzes and formal examinations have become more widely used by both the SOM and the GSN. One of the first, routine on-line quiz at USU was introduced, during

1999-2000, in the Department of Medicine's (MED) *Clinical Concepts Course*. Subsequently, similar quiz material was introduced in MED's *Introduction to Clinical Medicine, Biomedical Informatics, Radiology and Radiological Sciences*, and the *Health Service Administration Division of Preventive Medicine and Biometrics Courses*. The GSN *Pharmacology Course for Nurse Anesthesia* students introduced formal examinations as an on-line exercise, during the 2000-2001 Academic Year. This effort continued, during 2003, and was expanded to other GSN courses. The GSN intends to move most formal examinations to an on-line format; *the SOM Department of Pathology completed a conversion from paper-based formal examinations to on-line examinations, during 2004.*

The USU SOM Department of Medicine has introduced a widely used innovation in course administration. *CWebLog* is a WWW-based database for logging students' clinical experiences, during the medicine clerkships. As students submit data, they may be presented with a set of reviewed links related to the type of case they are reporting. Student entries are stored in an SQL database that is used to produce browser-based reports on any combination of clerkship experiences. A preliminary description of this project has been published and is described at: <<http://cweblog.usuhs.mil>>. Over subsequent years, all of the seven SOM clerkships have adopted *CWebLog* as one means of recording student experiences in the clinic. The project was expanded to include the collection with PDAs (*the Portable Digital Assistant (PDA) Initiative is discussed under The Department of Biomedical Informatics, which follows in this section*). Data from these devices is synchronized to the same SQL database as is data from personal computers and a web browser. The GSN Nurse Practitioner faculty use a similar WWW or Portable Digital Assistant (PDA)-based system and the GSN Nurse Anesthesia faculty utilize data collection in a spreadsheet format aggregated in their department's office.

MedPix, An Internet Teaching File for the Health Sciences. The USU *MedPix System* was developed to offer medical students, researchers, and clinicians a descriptive on-line database housing medical case examples. The database provides a fully-functional archive of clinical photographs and radiologic images, primarily of abnormal and disease conditions. Today, there is a shared Internet teaching file filled with a variety of illustrated medical cases available to anyone interested in learning more about an affliction or in sharing information and images from cases they have seen. These cases are further complemented with posted summaries, reports and editorial comments. **James Smirniotopoulos, M.D., Professor and Chair, SOM Department of Radiology and Radiological Sciences**, and third-year medical student **Ensign Henry Irvine** originated the USU program as a text-only database with aspirations to develop it into a multi-level program. Instead of using only static web pages, it was decided to use a database and dynamically generated pages. The intention was to allow its users, at remote sites, the ability to add images and cases into the database. The site began with a Radiology intent and has since branched off into the Dermatology and Pathology disciplines. Visitors to the site can also practice identifying ailments by selecting a *hide-text* feature. This allows the user the opportunity to take a self-quiz before the introduction to the actual illness. It is now an impressive site in terms of complexity and depth of resources. *MedPix* is also recognized as a powerful teaching tool for residents. By 2001, Radiology residents were using *MedPix* data for teaching files at such hospitals as the Tripler Army Medical Center, the Naval Medical Center at San Diego, and throughout the National Capital Region. Continuing through 2004, Doctor Smirniotopoulos' Distance Learning Program has provided monthly Neuroradiology Teleconferencing between USU and the Naval Medical Center in San Diego, California. In addition, Doctor Smirniotopoulos has received approval for providing on-line continuing medical education (CME) and continuing nursing education (CNE) through his *MedPix Radiology Teaching File*; the program provides one hour of Category 1 CME or 1.2 hours of CNE for every four *MedPix* cases. *To date, MedPix has provided more than 4,000 hours of continuing medical education.* The *MedPix Database* currently supports all of the DoD Diagnostic Radiology Residency Programs by administering and hosting commonly shared files. *MedPix has over 15,000 registered users,*

including active duty and civilian personnel world-wide, although registration is not required for simple case review. During 2003, the MedPix database was upgraded to include a secure web server for log-in and user administration; in December of 2004, the server was upgraded and now routinely delivers more than one gigabyte of data each day to more than 7,000 unique web visitors. ***MedPix has delivered more than 20 million pages, since September 3, 2000; and, it is the longest running Case of the Week Program in the world.***

Doctors Reeder and Smirniotopoulos have provided a ***Teach the Teachers*** project, sponsored by an educational grant from the Radiological Society of North America (RSNA), to train 6-8 African Radiologists in Tropical Imaging. This competitively chosen group will spend seven weeks at USU in classroom, small group, and independent study. The radiologists will then return to their home countries to share their experiences at USU. The hardcover textbook for this course is now available over the Internet at <http://tmcr.usuhs.mil>.

Compact Disc and Use of Internet Web Site Provide Cost-Effective Assistance. The Department of Pathology has digitized its entire student slide collection of pathological specimens covering all major organ systems, some 1,300 images, used in the MS-II Pathology Course. The images are available to students via the WWW and on compact disc. Directed to second-year medical students, the compact disc and WWW site provide assistance in preparing for pathology laboratories, lectures, small groups and examinations. The Pathology Department also uses the Internet to allow students to review cases on line and to submit a differential diagnosis. Their diagnoses are then incorporated, by faculty, during a didactic presentation of the cases. In addition to the image data bank, the pathology WWW site archives retired examination questions, the SOM Pathology Laboratory Manual, and lecture handouts. The department finds that the compact disc and WWW site increase the accessibility of images to students and result in significant financial savings in duplication costs and personnel time.

Further integrating technology into the Pathology Course, the Pathology Department has developed a data bank of examination questions that are archived and used in testing medical students. All internal examinations are delivered to students via computer using *Test Pilot* software. Gross and histological images are incorporated into the questions. The department's examinations mirror the pathology subject material on the USMLE Step 1 examination. Students receive immediate feedback on their performance when they submit their answers. The use of archived questions has allowed the Pathology Department to compare class performance from year to year, reduce ambiguity in examination questions, save money by not having to duplicate over 800 examinations annually, and maintain security for the questions.

The Department of Pathology also uses Internet technology to provide a web page independent of the University's web site. This page enables students to access information regarding Pathology's educational activities, links them with other medical schools and pathology web sites, informs the public of USU departmental personnel and research activities, and advertises the Pathology Department's Ph.D. Program in Pathology.

eMedicine.com - USU Faculty Help to Revolutionize Medical Textbook Publishing. During 2001, two USU department chairs and many other USU faculty played key roles in a publishing breakthrough that has redefined the way today's health care professionals can obtain timely and critical medical information (a skill which is essential to the medical students' future practice). This publishing breakthrough is called *eMedicine.com*; and, its impact is world-wide. *eMedicine.com*, the medical education network that has developed the first and largest on-line, peer-reviewed medical reference library, is available to the entire

world, free of charge, assuming Internet access. It consists of 59 on-line reference books, covering every medical specialty. Radiographic images, photographs, audio and video clips relevant to each topic are incorporated. Each chapter features 1.5 hours of Category I American Medical Association (AMA) Physician's Recognition Award continuing medical education (CME) credit. There are an estimated 15,000 hours of CME credit. Authors and medical editors are volunteers and are not compensated in any way for their efforts. There is significant supervision of content, with several layers of medical and copy editors to assure accuracy and quality. ***Unlike traditional textbooks, which can be as much as six years out of date at the time of publication, the information in the eMedicine.com chapters is updated 24 hours a day, 365 days per year. If an important new study is published in a journal, the research is immediately included in the on-line textbook.*** The United States military is the largest user of the site to date. There are at least five million users per year, and that figure is rapidly increasing every six months. **Leonard Sperling, COL, MC, USA, Professor and Chair, USU SOM Department of Dermatology**, is one of the editors and authors of the Dermatology Textbook on *eMedicine.com*. And, **James G. Smirniotopoulos, M.D., Professor and Chair, USU SOM Department of Radiology and Radiological Sciences**, is one of the editors-in-chief of the Radiology Textbook on *eMedicine.com*. Many other USU faculty members also contribute to this web site.

Virtual Reality-Based Environment for Teaching Clinical Anatomy. *Anatomic VisualizeR* is a virtual reality (VR)-based environment for teaching and learning clinical anatomy, which was initially developed by the University of California, San Diego (UCSD). Educational applications of *Anatomic VisualizeR* have been jointly explored by UCSD and USU. *Anatomic VisualizeR* made its curricular debut outside of UCSD, in 1999, when it was used for teaching two graduate-level nursing Neuroscience lectures; USU was the first school approved to use *Anatomic VisualizeR* outside of the UCSD. The two universities have jointly developed six new lessons. The application is utilized by both the GSN (***Neuroscience and Pathophysiology Courses***) and the SOM (***Introduction to Structure and Function***). *Anatomic VisualizeR* provides a virtual dissection room in which students and faculty can directly interact with three-dimensional models and concurrently access supporting curricular materials. A broad range of virtual exploratory tools enables users to investigate structures in ways not possible in the real world.

The USU Clinical Simulator, Patient Simulator Laboratory, and SIMCEN Present Scenarios Applicable to Combat Casualty Care, Anesthesia, Critical Care, Trauma, and Emergency Medicine. During 1997, the USU Departments of Anesthesiology (ANE) and Anatomy, Physiology and Genetics (APG), in collaboration with the National Naval Medical Center's Department of Anesthesiology, developed the Clinical Simulator and Patient Simulator Laboratory (PSL) located in the USU Department of Anesthesiology. The PSL has evolved into a fully interactive clinical training laboratory, equipped as an operating room with standard monitoring equipment, instruments, life support system, defibrillator, and complete audio/video recording equipment. This instructional facility supports training in combat casualty care, anesthesia, critical care, trauma, and emergency medicine. Students gain experience in recognizing problems, developing decision-making skills, and refining techniques and procedures. ***During 2004, the PSL provided over 600 hours of University-wide support for course offerings.*** Throughout the past year, numerous groups of students and medical personnel made regular use of the PSL both as a training facility and as a research resource: 1) **USU First-Year Medical Students - Cardiovascular Physiology.** During the last seven academic years, the PSL has been used as an integral part of the ***Physiology Course*** with the entire class of graduate and medical students rotating, in groups of eight, through a cardiovascular simulation. For these students, the simulator is used to complement a teaching laboratory that demonstrates the basic interactions of heart rate, blood pressure, cardiac output, stroke volume, and circulatory resistance; 2) **USU Second-Year Medical Students - Pharmacology Lectures Bring the Hospital to the Students.**

In addition, the PSL provides live, interactive distance education presentations to the second-year SOM students for illustrating simulated, clinical examples, during their Pharmacology lectures; thus, bringing the hospital to the students through the Advanced Distance Education Network (*ADEN*) designed by the PSL staff; 3) **USU Third-Year Medical Students - Two-Week Anesthesiology Rotation.** The simulator helps these students to learn the fundamentals of anesthesia; they practice connecting a patient to external life support sources, such as an oxygen mask, a ventilator, or manual ventilation via endotracheal intubation. USU medical students combine the lessons learned about the physiology of gas exchange and physiologic and pharmacologic responses, while actually performing the procedures and administering anesthesia on the patient simulator, without putting a patient, or themselves, at risk; 4) **USU Graduate Students in Nurse Anesthesia in the MSN Degree Program.** USU Graduate School of Nursing (GSN) students undergo basic and advanced simulator training, during which they must handle unique cases with unexpected complications. In the *Basic Principles of Anesthesia Course*, GSN students use the simulator to practice airway management, interpret EKG patterns, practice line placement, and begin learning anesthesia induction; during the next semester, the simulator is used to expand on these basic skills. Some nurse anesthesia students use the simulator as a laboratory instrument for their required Master Degree Thesis Project; 5) **Walter Reed Army Medical Center (WRAMC) Nurses - ICU Certificate Program.** These nurses are exposed to advanced patient care scenarios that include extensive equipment use and critical medical situation training; 6) **Uniformed Anesthesia Residents from Military Centers in the National Capital Region.** These resident physicians are challenged with complex, specifically-tailored medical scenarios, designed to prepare them for dealing with critical, time-sensitive situations. For example, recent, *incoming classes of anesthesia residents from WRAMC were given an extensive trauma training/evaluation with the simulator.* When the GSN became concerned that its students were not prepared to deliver anesthesia under austere conditions, because they rarely had an opportunity to work with Field Anesthesia Medicine, the GSN Nurse Anesthesia faculty developed a CD-ROM on field anesthesia, which is now a required part of the GSN Anesthesia curriculum; and, 7) **USAF Critical Care Air Transport Teams.** Once a month, USU hosts an *Air Force Critical Care Air Transport Team (CCATT) Session*, during which the three-person team treats the simulator as a real case. Practicing nurses, physicians, and respiratory therapists are involved in the CCATT training scenarios. They receive a call that their services are required, gather their gear, leave their hospital (Malcolm Grow Medical Center), travel to the site of the patient (USU PSL), evaluate the patient's condition, and provide sufficient treatment to ensure successful transport of the patient back to a hospital. Once they leave the hospital, they can use only equipment and supplies that they brought with them.

The patient simulator, featured at: www.usuhs.mil/psl/, offers many benefits to students and instructors. Without putting a life at risk, students can experience handling rare conditions such as malignant hyperthermia, learn to recognize a wide variety of problems, practice using instruments and equipment, develop decision-making skills, and accumulate first-hand experience with military-specific problems like combat trauma. Instructors can tailor each case to individual students, selecting the type, level of speed, and degree of severity according to the student's level of competence. If the instructor wants to give feedback or additional directions, the lesson can be paused and repeated as many times as necessary. Sessions are recorded and played back, enabling the students, with the instructors, to analyze their performance and to recognize their strengths and weaknesses. Because no life is at stake, instructors can purposely push students beyond their competency levels so they can learn and retain critical lessons. The patient simulator is a valuable addition to the USU curricula, one that will play an expanded role in the future; only a small percentage of the 125 United States Medical Schools have patient simulators. Offering the single simulator in the PSL to teach a class size, of more than 165 students, requires complex scheduling. *During 2000, collaboration between the PSL, the Simulation Center (SIMCEN) at Forest Glen, and the patient simulation facility at the Naval School of Health Sciences (located on the NNMC base) now provides access to a total of 12 mannequins that span the range of ages from newborn to adult,*

both male and female (four at the USU Military Medical Simulation Center (SIMCEN); two at the Naval Medical Education Training Command, located at the National Naval Medical Center; and, six mannequins at the PSL).

The National Library of Medicine and the USU *Internet2* Link for Distance Education. During 2004, the *Internet2* link provided by the National Library of Medicine (NLM) to USU has continued to serve as an invaluable component, in the on-going USU activities for leveraging the power of its simulation-based education programs, in order to reach large numbers of students via its distance education system. ***Live, two-way sessions are now sent between the USU PSL and:*** the USU Lecture Hall E for the first-year medical students; USU Lecture Hall D for the second-year medical students; the National Naval Medical Center/Naval Medical Education Training Command (NMETC) Simulation Facility; the Armed Forces Institute of Pathology (AFIP) Medical Museum in Washington, D.C.; and, St. Francis University located in Loretto, Pennsylvania. Within the past two years, the USU Patient Simulation Laboratory acquired \$125,000 in extramural funding for *GigE Network Gear* to extend the NLM-provided *Internet2*, throughout the USU campus and the National Naval Medical Center (NNMC); the PSL is utilizing a \$240,000 clinical distant educational grant that will establish the *Internet2* links between USU, NNMC, NLM, AFIP, and the Walter Reed Army Medical Center as a test-case for world-wide telemedicine training and treatment for the DoD clinical community.

A Multi-Disciplinary Approach for Teaching Responses to Weapons of Mass Destruction and Terrorism. Beginning in 2000 and throughout 2004, the USU Patient Simulation Laboratory has provided educational experiences for both clinicians and emergency operations personnel in Weapons of Mass Destruction and Terrorist (WMD/T) scenarios, during a USU SOM Course, ***The Scientific, Domestic and International Policy Challenges of Weapons of Mass Destruction and Terror.*** The Course on WMD/T generally includes two modules: *Part I, The Emerging Threat of Biological Weapons and Bioterrorism*; and, *Part II, Nuclear, Radiological, High Explosives, Chemical Agents, and Unusual Weapons.* Simulated scenarios have been designed through the cooperation of experts in bioterrorism, chemical warfare, medical effects of radiation, and trauma. Students who take this course include senior military officers, physicians, nurses, lawyers, career politicians, administrators, and logistic personnel. Part I culminates in extensive simulated crisis events including inhalational anthrax, pneumonic plague, marine toxins, and other biological agents. ***Part II culminates in an intense simulated crisis event involving the terrorist use of chemical, radiological and explosive devices.*** Non-clinical students, functioning as staff in emergency operation commands, embassies, and/or hospital response centers, manage conflicting information from on-scene observers, other agencies, and media resources. Clinical students, functioning as staff in an emergency room, provide direct care of multiple patients presented by both mannequin-based simulators and human actors. Debriefing entails discussions about performance in: leadership and followership skills; team performance and dynamics; communication skills; data management; logistic support; resource allocation; emergency declaration; assessment and reevaluation of situation(s); medical triage; medical diagnosis; medical treatment; containment of outbreak(s) or agent(s); and, appropriate notification of other officials. ***These simulated presentations have received overwhelming approval from the participants as documented in the students' course critiques.*** Course instructors have requested continuation of past presentations as well as new scenarios. Crisis Management following a WMD/T attack can be taught using patient simulation as the foundation for the event; and, multi-disciplinary input has resulted in simulated events, which are overwhelmingly accepted by students. This experience allows personnel who will fill positions involving the management of a WMD/T attack to have their *first time for real* through a simulated educational event.

USU Patient Simulation Laboratory Trains the Trainers of the Combat Medical Skills Course. The USU Patient Simulation Laboratory (PSL), in cooperation with the SOM Department of Military and Emergency Medicine (MEM), has instituted a *train-the-trainers program* for the Combat Medical Skills (CMS) annual course for the first-year medical school class. The CMS Course introduces the USU students to medicine at the front line of the battlefield. Since the beginning of the Global War on Terrorism, the military medical commands have been operating as a Joint Services effort, employing military clinicians in many ways, with which, they were not accustomed. In on-going efforts to appropriately prepare the SOM students, MEM has continued to update the CMS Course. As of January 2005, the Tactical Combat Casualty Care handout has been incorporated into the CMS text book. This handout is based upon lessons learned by the Joint Special Operations Forces community. This new information aids those schooled in conventional treatment with an understanding of the similarities and differences between civilian and battlefield casualties. Over a dozen instructors are required to teach CMS. ***To ensure that all of the instructors have a common background, the unique “scheduled disasters” capability of the PSL is used to create hands-on sessions specific to the instructor’s training needs.*** (The PSL is discussed in further detail in Section II, MILITARY UNIQUE CURRICULUM.)

A Virtual Introduction to the Surgical Clerkship. The third-year surgical clerkship is preceded by a three-day introduction to clinical models and operative procedures utilizing the National Capital Medical Simulation Center (SIMCEN) and the animal surgical facilities in the USU Department of Laboratory Medicine. This innovative and comprehensive approach, which occurs with third-year SOM students every six weeks, familiarizes the students with patient interactions associated with the presentation of common surgical illnesses as well as introducing various surgical techniques, priorities, equipment and procedures. The advanced technologies of the SIMCEN employ live patient models well versed in specific disease histories and symptoms. Disease scenarios include common problems such as pancreatitis, appendicitis, ectopic pregnancy, and gallbladder disease. Students perform comprehensive, focused histories and physicals on two to three *patients* under real-time observation by a faculty-teaching surgeon. The encounter is taped for interactive student-teacher reviews, during small group discussions of techniques and performance. In addition to the patient encounters, separate laboratories are held to teach and perform knot tying, endotracheal intubation and ultrasound fast examination techniques on mannequins. A human patient simulator is used to teach acute trauma care, utilizing various scenarios creating positive and negative outcomes to specific student treatment choices. There is also a virtual reality laboratory for the performance of technical skills including suturing and cricothyroidotomy. (Further information on the SIMCEN and the Third-Year Surgical Rotation is provided in Section II, MILITARY UNIQUE CURRICULUM.)

Establishment of a Center for Informatics in Medicine. Biomedical data and the field of informatics continue to rapidly expand. Processes of knowledge retrieval and decision-making are critical to the future health care provider. In light of technology’s role in knowledge development, biomedical informatics has become an essential component of education in the Health Sciences. Following graduation, health care professionals must be able to use biomedical information to define, study, and solve problems.

In 1996, decisions were made to establish a USU Center for Informatics in Medicine, to be placed under the Vice President for Teaching and Research Support (TRS), as an interim step toward the creation of an academic Department of Biomedical Informatics. From 1997 through 1999, a coalition of CIM, the LRC, and the appropriate Dean’s Office (SOM or GSN), initiated steps to prepare incoming USU students for the expanded role of informatics in their studies and professional careers. ***It was recognized that if students are to fulfill the five key roles of health care providers - lifelong learner, clinician, educator/communicator, researcher, and manager - they must have the benefits of a dedicated biomedical***

informatics program. The Center for Informatics in Medicine has enhanced USU informatics research and education through introductory computer courses, a workshop on Internet applications in diagnostic pathology, and the development of such diverse areas as web sites on educational technology, military graduate education, and HIV in the military. During 2004, the Center continued to provide computer orientation courses for faculty and students. ***The Center maintains over 100 educational web sites for the University; these sites serve on-campus and distance students, residents, and faculty.*** Highlighted sites include the University's on-line student assessment of instruction (for both the SOM and the GSN). Also provided are self-assessment, surveys, quizzes, and major course examination sites for the following selected examples of USU activities: the Faculty Senate; the GSN VA/DoD Distance Learning Program; the GSN Nurse Anesthesia and Family Nurse Practitioner options in the GSN MSN Program; and, the SOM Departments of: Anatomy, Physiology and Genetics; Medicine; Pathology; Pediatrics; Pharmacology; Preventive Medicine and Biometrics; and, Radiology and Radiological Sciences. CIM continues to have responsibility for video teleconferencing interface at USU; support has been provided to the GSN VA/DoD Nurse Practitioner Program (six sites); the SOM Department of Obstetrics and Gynecology Clerkship Coordinators Meeting (three to five sites); the 8th NASA Medical Topics: Occupational/Environmental Health and Safety Primer and Issues Series; and, a video teleconference between the SOM Department of Pediatrics and Rota, Spain, on a repeating basis.

Informatics Education. The doctor is the most highly trained individual in the health care system, and as such it is the doctor who should be the final judge of the data entered into the electronic medical record. If the medical record is also a research tool, then this gives a new responsibility and value added to the physician. Educating medical students to do this well is a major challenge. Students who are not exposed to this type of thinking and practical training in medical school will be at a disadvantage when it becomes the norm, as it surely will.

- Journal of Investigative Medicine, Volume 46, No. 8, October 1998, page 345.

The Department of Biomedical Informatics. In June of 1998, the Dean, SOM, appointed a committee to assist in creating the Department of Biomedical Informatics; during 1999, the USU Board of Regents approved the creation of the new academic department. ***The SOM's Department of Biomedical Informatics (BID) is recognized as a basic science department with three areas of specialization: bioinformatics, medical informatics, and education.*** It serves as a resource center to extend and enhance already strong curricula through departmental and interdisciplinary courses that: integrate basic sciences with clinical experiences; offer simulated clinical training experiences; continue current teaching efforts in introductory computing; and, focus on student-centered learning through case-based, small-group sessions. It also serves as a clearinghouse for USU informatics applications and provides a testing facility for informatics research. The department helps to ensure that all USU graduates have a foundation in informatics that will support them, as career professionals, in the Military Health System. Specifically, the charter for BID includes the following: 1) support for the curricula through educational technology; 2) extension of the curricula through biomedical informatics; and, 3) identification and research of innovative informatics applications for military health care.

Since 2000, the Department of Biomedical Informatics (BID) has been charged to act as a resource center to *support* and *extend* the USU medical curriculum and to act as a *focus* for developmental and research activities in informatics. ***The university-wide operation of the Center for Informatics in Medicine***

has been retained as the department's service-based component. Research computing will eventually be reassigned to the Department of Biomedical Informatics and it will no longer be considered a part of the Information Services Management Center (UIS). The Department of Biomedical Informatics serves as the focal point for USU's academic computing support, spear-heading such activities as sequence analysis, statistical computing, and the student web page pilot project. It also solves problems associated with the University's widely dispersed informatics initiatives. In the past, attempts to incorporate informatics into USU curricula had been handled by individual departments, leaving the efforts vulnerable to collapse if a key member of the department left or was reassigned. The Department of Biomedical Informatics now serves as a central resource into which all departmental informatics endeavors can be incorporated. Resources for this department will be gradually increased in accordance with the requirements of the SOM and the Military Health System.

Two projects supported by BID, during 2000 and 2001, involved innovative education applications for military health care. A collaboration with the University of California at San Diego (UCSD) brought the National Library of Medicine's Visual Human to the USU campus as part of an application developed at UCSD - *Anatomic VisualizeR*. This 3-D visualization tool for the Visible Human Data Set uses a high end Silicon Graphics workstation for stereoscopic rendering of the data set. This collaboration has developed five lessons specifically for the SOM and the GSN Anatomy Courses. ***In August of 2000, the Dean of the SOM charged the Department of Biomedical Informatics to implement a USU Medical Portable Digital Assistant (PDA) Initiative.*** A working group of students, staff, and faculty devised a staged working plan to deploy the PDA to include: distribution and introduction of the PDA to the SOM students; usage training; communication deployment at USU; communication deployment to the Military Treatment Facilities (MTFs); and, evaluation and refinement of the initiative. The PDA devices were provided to the USU second-year medical students, in December of 2000. Studies have confirmed that physicians and medical students are able to successfully incorporate PDAs into their patient care workflow. With the use of a drug information database, clinicians save time, improve knowledge for themselves and their patients, and possibly decrease preventable adverse drug effects. The goal of the USU Medical PDA Initiative is the integration of this technology into the clinical setting. The objectives of the USU PDA Initiative follow: 1) communication while students are at clinical sites (*HandDBase* and associated databases); 2) clinical encounter log collection (*CWebLog* developed within the USU Departments of Biomedical Informatics and Medicine); 3) clinical reference material access (*qRx(ePocrates)* and 5-Minute Clinical Consult; and, 4) clinical calculator availability (*MedMath*). USU students are responsible for installing five applications and the *CWebLog* channel on their PDAs. During their clerkships, each student is expected to operationally maintain his or her PDA. The PDA serves as a significant option that the USU students have for maintaining a log of their clinical encounters. During 2001, this educational tool was determined to be a complete success and that distribution would be continued in the future. During 2004, the Department continued its support for the PDA Initiative. ***To date, Personal Digital Assistants have been issued to four classes of SOM and Graduate School of Nursing (GSN) students.*** The USU PDA Initiative was highlighted at the Symposium of the American Medical Informatics Association; and, the resulting paper, *The USU Medical PDA Initiative: The PDA as an Educational Tool*, was submitted and published in the Journal of the American Medical Informatics Association, in November of 2002.

As mentioned above, during 2004, BID was responsible for the Clinical *CWebLog* (at <http://cweblog.usuhs.mil/>), which is used by USU SOM students to document their experiences, during their clinical rotations; *CWebLog* is currently used by the seven third-year clerkships with access through a web browser and the PDAs issued to the SOM and GSN students. Also, during 2003, the Department established its second course, BID-510, Introduction to the Department, which organizes and teaches *MCB-501, Introduction to Computers for Bioinformatics Computer Skills* (established during 2002, with assistance from faculty and staff in the SOM Department of Preventive Medicine and Biometrics and the Learning

Resource Center). *The new course was offered during the 2004 Academic Year.* BID also continues to support the implementation of a high performance research network at USU (*Internet2*). Due to an operational connection to *Internet2*, through the National Library of Medicine, BID hosted demonstrations from USU laboratories, during 2004.

National Capital Area Medical Simulation Center.

The SIMCEN is a world-class, cutting-edge medical education facility, and serves as a template for more than 35 educational institutions currently attempting to employ similar simulation technology into their own medical education programs; the SIMCEN has been featured in a Discovery Channel Series and by major newspapers and professional journals. Today, this facility is unique among the Nation's limited simulation centers because five state-of-the-art teaching components are included under one roof: standardized patients; multi-media, interactive, clinical case presentations on LAN or web-based CD-ROMS; virtual reality software applications; computerized mannequin simulators; and, video-teleconferencing and distance education capabilities... Through over 10,000 encounters, students and residents have gained experience in developing decision-making skills, familiarizing themselves with instruments and equipment and refining techniques and procedures. Recently, the SIMCEN participated in the development of an Anthrax Vaccine Immunization Provider Response Program with the Walter Reed Army Medical Center, Johns Hopkins University, and the Centers for Disease Control.

- **The Honorable Donald H. Rumsfeld, Secretary of Defense**, Narrative Statement and Citation to accompany the Distinguished Civilian Service Award, presented on August 2, 2004.

Background. In response to new technologies and increasing requirements for standardization in clinical assessment skills, coupled with a diminishing in-patient teaching base, United States medical educators have developed a variety of new training and testing tools (trauma and anesthesia simulators, interactive computer-based testing (CBT), distance learning, virtual reality applications, and clinical simulations using *standardized patient* actors (SPs). All of these innovations are being rapidly implemented throughout the United States and are being incorporated as new quality standards for medical education and testing. For example, the National Board of Medical Examiners scheduled the implementation of CBT in the United States Medical Licensing Examination (USMLE) for 1999; and, clinical testing utilizing standardized patients was to be implemented as part of the USMLE Step 2 by 2005. Similar requirements are being discussed by the accrediting entities for advanced practice nurses.

These innovations in medical education conform to the 1995 DoD Medical Readiness Strategic Plan, which states: *The use of modern technological advances such as computer simulations and virtual reality has the potential to provide realistic training in battlefield techniques and procedures, and should be pursued to enhance medical readiness training.* In July of 1995, the Dean of the USU School of Medicine and the Commander of the Walter Reed Army Medical Center (WRAMC) established a committee to plan for a model military medical simulation center for the: 1) development and use of military medicine databases for education and training; 2) simulation, teaching, and measurement of patient interviewing, physical examinations, and diagnostic skills; 3) instruction, assessment, and documentation of readiness skills; and, 4) focused pre-deployment training. The Associate Dean for Clinical Affairs, SOM, was appointed chair of the planning committee and designated to coordinate the project for the University.

Upon the determination of space and personnel requirements by the planning committee, a building on the WRAMC Annex at Forest Glen, Maryland, was identified and approved, by the Commander of WRAMC, as the location for the center. An initial design study, funded jointly by USU and WRAMC, was

completed in September of 1996. In 1997, the concept was briefed to the Assistant Secretary of Defense for Health Affairs and the Surgeons General, during a meeting of the TRICARE Readiness Executive Committee (TREC); the concept was then referred to the Defense Medical Readiness Training and Education Council (DMRTEC). Following a briefing on September 25, 1997, the DMRTEC approved the concept and recommended that USU program for funding. In 1998, the President of USU allocated funds for the renovation of the Forest Glen space and the purchase of equipment. The one hundred percent design was completed on August 12, 1998. Funds for renovation, furniture, and security were obligated on September 30, 1998. Program development and the hiring of staff began late, in Fiscal Year 1998, and continued, throughout Fiscal Years 1999 and 2000. The construction, required for renovation, was completed, during 1999; in October of 1999, the simulation center began training and testing military physicians, nurses, and medical students. On April 21, 2000, the 11,000 square foot National Capital Area Medical Simulation Center (SIMCEN) was officially opened at the Walter Reed Army Medical Center Annex in Forest Glen, Maryland. ***The SIMCEN is the first single location to integrate the use of virtual-reality technology, computer-controlled mannequins, needle insertion simulators, interactive software applications and human simulated patients under one roof to undertake comprehensive medical educational scenarios.***

Educational Activities. During 2004, the SIMCEN was instrumental in introducing medical simulation technology in support of numerous and distinct medical education programs. ***Since October of 1999, the SIMCEN has supported 89 distinct educational activities: 28 - School of Medicine; 14 - Graduate School of Nursing; 21 - Graduate Medical Education; 10 - Operational Medicine; and, 16 - Research Training activities. These educational activities, in turn, supported over 27,000 student encounters with medical simulation.*** It is now estimated that each USU SOM student will utilize the medical simulation center on an average of 26 times, during the four years of medical school education (*this number of encounters could well be the gold standard for student simulation encounters for all United States medical schools*). At present, the SIMCEN expects to support a similar number of programs and student encounters, during 2005.

Since its establishment, the SIMCEN has conducted over 565 tours (60 foreign nations; 125 educational institutions - *many of the Nation's 126 medical schools have already visited the SIMCEN*; and, over 380 visits from military, professional, congressional, and private organizations). ***To date, the SIMCEN is currently serving as a template for more than 45 educational institutions that are attempting to employ similar simulation technology into their own medical education programs.*** As an example of the growing reputation of the SIMCEN, on February 21, 2001, the USU SIMCEN was included in the ***Discovery Channel Series, The Nature of Things.*** The SIMCEN has also been featured in the ***NBC Nightly News*** and ***Fox News***; the segment of the program featuring the SIMCEN was entitled, *Surgeons of the Future*. To date, reports of the SIMCEN's activities and simulation capabilities have led to publications in numerous newspapers and professional journals and in national television programs; selected examples include: *The New York Times*; *GeoWissen*; *U.S. Medicine*; *Institute for Electrical and Electronic Engineers*; *American Forces Information Services*; *Military Medical Technology*; *Sea Power*; *Stripe*; *USU Quarterly*; and, television reports in: *Fox News*; *NBC Nightly News*; *The Discovery Channel*; and, *The Canadian Broadcasting Corporation*.

Multi-Simulation Techniques Under One Roof. While an increasing amount of professional health care training uses simulation techniques, the SIMCEN is unique among the limited simulation centers found at civilian medical schools, in the United States, because five state-of-the-art teaching components are included under one roof: 1) standardized patients (*patient actors*); 2) multi-media, interactive, clinical case presentations on LAN or web-based software applications; 3) virtual reality software applications;

4) medical simulators (computerized mannequin simulators and other medical simulators); and, 5) video-conferencing/distance education. It uses technology and actors posing as patients to teach students about situations that they may encounter as practitioners, but might not otherwise experience while training in hospital wards. It also allows for a safe transition between simulations in the classroom and real-life situations in the clinic for learning procedural and surgical skills, and for the interaction with patients in sensitive or difficult situations. ***Another use of the SIMCEN is the instruction of readiness skills and focused pre-deployment training for wartime, peacekeeping, and humanitarian missions.***

The SIMCEN is divided into four functional areas: the Administrative Area; the Clinical Skills Teaching and Assessment Laboratory; the Computer Laboratory; and, the Surgical Simulation Laboratory. Each distinct area can sustain educational activities on its own; and, when necessary, integrate the operations of the entire SIMCEN for a more comprehensive approach. All of the functional areas have been designed to maximize students' access to clinical experience in a state-of-the-art learning environment. The SIMCEN's current research activities include validating the educational efficacy of cutting-edge simulation technology. Some examples of the specialized simulation equipment currently being used include: 1) ***CathSim AccuTouch: Immersion Medical***; 2) ***Vascular Anastomosis Simulator: Boston Dynamics, Inc.***; 3) ***Bronchoscopy Simulator: Immersion Medical***; 4) ***Laparoscopy Simulator: Immersion Medical/Surgical Science***; 5) ***Ultrasound Simulator: MedSimEagle***; 6) ***Human Patient Simulators: MedSimEagle***; 7) ***SimMan Patient Simulator: Laerdal/Medical Plastics Laboratory***; 8) ***Hand-Immersive Workstation: Cie-Med***; 9) ***Head Mounted Display***; 10) ***People-Shop Software: Boston Dynamics, Inc.***; 11) ***Emergency Care Simulator: Medical Education Technologies, Inc.***; 12) ***Diagnostic Peritoneal Lavage Simulator: Immersion Medical/USU/SIMCEN***; 13) ***Pericardiocentesis Simulator: Immersion Medical/USU/SIMCEN***; and, 14) ***Cricothyroidotomy Simulator: Reach-In, Inc./USU/SIMCEN***. (The last three simulators were developed by the USU staff at the SIMCEN.)

The Administrative Area. The Administrative Area serves as the hub for the SIMCEN; the area includes both the administrative offices as well as the Video Teleconference (VTC) Room. In addition to daily operational activities such as personnel, budgeting, and resource allocation, the Administrative Area houses the offices of the SIMCEN Director, the Director of Administration/Computer Laboratory, the Director of the Clinical Teaching and Assessment Laboratory, and the Secretary. The VTC Room is the SIMCEN's audio/video entry and exit point to the outside world. ***Equipped with state-of-the-art video teleconferencing equipment, any of the video signals, throughout the SIMCEN, can be routed through the VTC Room and sent to any connected site in the world.*** This capability allows individuals at remote sites to participate and to review many of the exercises that take place in the SIMCEN. The VTC Room is equipped with a *telecommuting* conference table, which allows up to twelve students, faculty, or visitors to connect their computer laptops to twelve local area network ports for high-speed Internet access. The table is also outfitted with sixteen headphone ports, allowing various audio exercises, which permit instructors and students to simultaneously utilize the same audio files for review and discussion. As a standard conference room, it is also equipped with a slide-to-video converter, document camera, and VCR.

The Clinical Skills Teaching and Assessment Laboratory. The Clinical Skills Teaching and Assessment Laboratory (CSTAL) is designed for teaching and evaluating students in the basic clinical skills of history-taking, physical examination, communication, and interpersonal skills. Here, ***encounters with simulated patients provide an ideal transition from the classroom to real patient contact. The CSTAL also prepares medical students for the United States Medical Licensing Examination (USMLE).*** The area is comprised of four sub-sections: the Orientation Room; the Clinical Examination Room Area; the Monitoring Area; and, the Standardized Patient Lounge. The Orientation Room is used to brief the

students. A ceiling-mounted, drop screen and LCD projector are used to display PowerPoint and/or video presentations for orientation, registration, and briefing students on specific event protocols. The students are registered for clinical events, through a log-in process, which tracks the students, throughout their activities at the SIMCEN.

The Clinical Examination Room Area consists of 12 examination rooms, which serve as the simulated clinical environment for the SIMCEN. There are ten typical (120 square feet) examination rooms and two large (220 square feet) rooms with hospital beds that can be used for inpatient and/or critical care simulation. The large rooms are also suited for trauma simulation and small group teaching events. ***In the Clinical Examination Area, students have the opportunity for encounters with live patients who simulate specific challenges in outpatient, inpatient, or critical care settings.*** Specifically, individuals, referred to as standardized patients, are hired and trained to simulate scripted clinical cases. These clinical cases may be simulated using performance, make-up, real conditions, or a combination of all three. Each Clinical Examination Room is equipped with two video cameras and microphones that permit encounters to be recorded for subsequent analysis and self-evaluation. Each room is equipped with a computer for the patient; a wall-mounted computer is also located outside of each room for students to use for documentation, before and after, the encounter. Typically, clinical examinations are designed following a directive to achieve specific educational goals. The Standardized Patient Trainers and the Medical Director collaborate with faculty members to create projects that meet stated educational goals.

The Monitoring Area is located at the center of the Clinical Examination Area and allows the Standardized Patient Trainer and faculty instructors to monitor the progress of the clinical examinations. A specialized video router controls 24 videotape decks that track the students as they move from room to room. A touch-screen control panel permits cameras to be positioned for optimal imaging. ***Faculty and students are able to view recorded tapes, as if they were in the room, allowing for more detailed observation and more dynamic feedback.*** The Monitoring Area is also used for training simulated patients.

The Standardized Patient Lounge is a staging area for simulated and standardized patients to prepare for, and to relax following, activities at the Center. This area is required as the *patient actors* often use theatrical make-up to simulate traumatic injuries or other conditions.

The Computer Laboratory. The Computer Laboratory has two sections: the Computer Laboratory itself and an adjacent Control Room. ***The Computer Laboratory has two primary functions. The first is to identify, develop, and/or use medical education software that contributes towards clinical or medical readiness skills. The second is to provide an environment in which computer-based, interactive clinical examinations can be administered.*** The Computer Laboratory consists of sixteen Internet accessible workstations that can run a variety of medical educational CD-ROMs. Eight overhead cameras and a one-way mirror between the Computer Laboratory and the Computer Control Room ensure that examinations are properly monitored, when the Computer Laboratory is being used for testing. Students use the Computer Laboratory to work with interactive software programs that may be linked to activities occurring in other functional areas of the SIMCEN. ***Additionally, the Computer Laboratory is designed to meet the specifications of the National Board of Medical Examiners (NBME) for a certified United States Medical Licensing Examination (USMLE).*** Although not currently certified, the Computer Laboratory assists students in preparing for the USMLE through the use of test preparatory software packages. Students and faculty can also use the computers to learn and evaluate various clinical and surgical skills (*e.g., communication, history-taking, physical examinations, and cardiac auscultation*) through interactive software applications. Many of the applications are offered using the local area network (LAN). Other applications are web based and accessed via the Internet. The Computer Laboratory also includes a separate

Video Teleconferencing/Advance Distributive Learning (VTC/ACL) capability that serves as the audio/video entry and exit point to the outside world. Video signals from anywhere in the SIMCEN can also be viewed via a fiber optic connection and can be transmitted world-wide via VTC or the Internet.

The Computer Control Room is adjacent to the Computer Laboratory; it is the nerve center for the SIMCEN. All data, voice, and video signals are fed through the Control Room and can be routed to other areas in the SIMCEN, accordingly. The Control Room also houses several departmental servers that handle the current requirements of the Center. During testing, the Control Room operates as a monitoring station for instructors, allowing overall viewing of the Computer Laboratory through a one-way, mirrored window or specific viewing of the individual workstations from the overhead cameras.

The Surgical Simulation Laboratory. The Surgical Simulation Laboratory (SSL) uses virtual reality and a full-scale operating room mock-up to provide highly realistic scenarios for surgical training. This area is the first site approved to investigate teaching the surgical skills practicum for the Advanced Trauma Life Support Course through the use of computer-based simulators and plastic models rather than anesthetized animals or cadavers. ***During the past two years, the SIMCEN has conducted the Nation's first Advanced Trauma Life Support (ATLS) Course using virtual-reality based simulators, computer-controlled mannequins, and medical models instead of animals.*** The Operating Room is furnished to look and feel like a full-scale operating room. In addition to the typical Operating Room equipment, the room holds intravenous catheterization, bronchoscopy, endoscopy, and diagnostic ultrasound simulators designed to provide highly realistic scenarios for trauma, anesthesia, and surgical training. The Operating Room can be configured to match the conditions of a standard Operating Room, an Emergency Room, or an Intensive Care Unit. Here, a single human patient simulator responds to various drugs and interventions. Computer driven, the human patient simulator can be pre-programmed with patient characteristics or variables such as age, anatomy, and physiology factors depending upon the training event. Students are faced with real-life situations as the human simulator breathes out carbon dioxide, and breathes in various gases, depending upon the scripted clinical procedure. Beginning in 2000, when the second mannequin-based simulator was installed at the SIMCEN, through 2004, the three-day introduction to the SOM third-year surgical clerkship has included a day at the Surgical Simulation Laboratory operating room (OR) at the SIMCEN. Disease scenarios include common problems such as pancreatitis, appendicitis, ectopic pregnancy, and gallbladder disease. Students perform comprehensive, focused histories and physicals on two to three *patients* under real-time observation by a faculty-teaching surgeon. The encounter is also taped for interactive student-teacher reviews during small group discussions of techniques and performance. In addition to the patient encounters, separate laboratories are held to teach and perform knot tying, endotracheal intubation and ultrasound fast examination techniques on mannequins. A human patient simulator is used to teach acute trauma care, utilizing various scenarios creating positive and negative outcomes to specific student treatment choices. There is also a virtual reality laboratory for the performance of technical skills including suturing and cricothyroidotomy. Courses taught in the OR include an ***Introduction to Surgery Course*** for third-year SOM students (described above), and an ***Airway Management Workshop*** taught by the GSN Nurse Anesthesia faculty for providers at local Military Treatment Facilities. The OR is featured at the SIMCEN web site: (<http://simcen.usuhs.mil/Surgery/OR/index.html>).

The simulator has five palpable pulse areas and will exhibit the appropriate physiologic reactions in response to various intravenous or inhaled agents. ***Presently, there is a capability for 80 different drugs to be virtually administered by various computer microchips.*** The simulator responds to the type and amount of these drugs according to instructor-determined, pre-programmed patient variables. In the Operating Room Control Room, a two-way headset and a one-way mirror into the Operating Room allow instructors to communicate with the Operating Room Coordinator. From the Control Room, the coordinator can

change patient variables on the computer and even speak into a hidden microphone feed, on the simulated patient, in order to bring more realism to the scene.

The Virtual Reality Room, which is funded, in part, by the Association of Military Surgeons of the United States (AMSUS), develops computer-based surgical simulators and software applications with 3-D, haptic feedback features, designed to meet the educational objectives of USU. ***Two functional directives of the Virtual Reality Room are research that advances simulation procedures and harnessing the capabilities of existing technologies.*** In the Virtual Reality Room, state-of-the-art computer-based equipment enables students to view medical objects in two or three dimensions. *A haptic interface allows the computers to re-create the tactile sense, which permits users to touch, feel, manipulate, create, and alter simulated 3-D anatomic structures, in a virtual environment.* Here students can teach themselves, at their own pace; and, they can feel comfortable about making mistakes, as well as, repeating an exercise. The Virtual Reality Room is equipped with simulators for Vascular Anastomosis, Pericardiocentesis, a Diagnostic Peritoneal Lavage Unit, and a hand-immersive environment for on-going research. ***Both the Pericardiocentesis and Diagnostic Peritoneal Lavage Simulators were developed in the Virtual Reality Room.*** These two simulators are the first of their kind; and, they are unique to the SIMCEN. During 2004, the USU SOM Department of Surgery conducted Ultrasound Courses, training over 400 students. Also, during the past year, the entire class of third-year SOM students benefited from the resources of the Surgical Simulation Center. The facility was also used to conduct oral boards for NCC residents, under the direction of **Colonel Mark W. Bowyer, USAF, MC, FACS, Associate Professor, USU SOM Department of Surgery.**

Examples of Recent Achievements. In addition to participating in the numerous educational activities enumerated above and managing the tours and collaboration to assist other medical schools in developing similar simulation capabilities, the faculty and staff at the SIMCEN have undertaken the following endeavors, during 2004.

Funded Projects:

- Contracts with Telemedicine and Advanced Technology Research Center, United States Army Medical Research and Materiel Command to develop:
 - *A Validation Study of the VIRGIL Trauma Mannequin* (the second phase of the project is yet to be funded);
 - *A Virtual Reality Cricothyroidotomy Simulator for Advanced Trauma and Combat Casualty Training*;
 - *A Validation and Verification Study of the Distributed Immersive Virtual Environment for Medical Education* developed by the University of New Mexico and the University of Hawaii;
- A contract with Eastern Virginia Medical College and Old Dominion University to develop a *Validation Study of a Catheter Insertion Project* to be conducted by these institutions in four phases (two phases of this project have yet to be funded); and,

- Participate in a grant awarded to the USU Department of Pediatrics in a project entitled, *Collaborative, Competency-Based Medical Education*, funded by Health Resources Services Administration (HRSA), United States Department of Health and Human Resources (HHS).

Collaboration With:

- The Department of Psychiatry at the Walter Reed Army Medical Center in a Telemedicine and Advanced Technology Research Center, United States Army Medical Research and Materiel Command funded project, *Comparing Provider Recall, Therapeutic Alliance and Other Interpersonal Factors between Video Teleconferencing and Face-to-Face Clinical Encounters*;

- The Medical and Clinical Psychology Department at the USU SOM in a National Institutes of Health funded project, *USU Center for Health Disparity Research and Education*;

- The Departments of Psychiatry at the Tripler Army Medical Center (TAMC) and USU to conduct *Video Teleconferencing Clinical Encounters between Standardized Patients at USU and Undergraduate Psychiatry Clerics Located at TAMC*, and the TAMC Department of Internal Medicine to demonstrate *The Value of ACCESS GRID INTERNET2 Capabilities in Medical Education*;

- The Continuity Clinic of the Family Medicine Department at the Malcolm Grow Medical Center, piloted to use *Unannounced Standardized Patients in a Clinical Setting*;

- The Clerkship Directors at USU and Emory University to sponsor a post-course entitled, *Objective Structured Clinical Examinations and Standardized Patients in Medical Education: Getting Started and Expanding Roles for Physicians*;

- The USU SOM Department of Pediatrics in a Health Research Services Administration (HRSA) funded project to *Enhance Clerkship Education Modalities in Support of Developing High Stakes Clinical Assessment Cases*;

- The Telemedicine and Advanced Technology Research Center, United States Army Medical Research and Materiel Command funded project to *Validate Two Advanced Urethroscopy Simulation Workstations*, developed separately by Immersion Medical and Symbionix;

- The Research Triangle Institute, of North Carolina, in an Office of the Secretary of Defense, Health Affairs, funded project to develop *Virtual Trauma Training Scenarios for Primary Care Physicians and Physician Assistants*;

- The ICM 2, USU SOM Course Director to *Develop an Introduction of Physical Exam Teaching Associates Course Where Standardized Patients Are Trained in Specific Anatomical/Physiological (i.e., abdominal, neurological, musculo-skeletal, etc.) Aspects of the Physician Exam Process*;

- The USU SOM Department of Medicine and the New York Academy of Medicine, Association of American Medical Colleges (LCME) project for *Enhancing Education for the Clinical Transition*; and,

- The USU Graduate School of Nursing and the USU SOM Department of Obstetrics and

Gynecology on a *Genetics Education Counseling Course for Family Nurse Practitioner Trainees with Standardized Patients*.

Institutional Agreements:

- Complete a *Collaborative Research and Development Agreement (CRADA)* with the Research Triangle Institute at North Carolina. A *Non-Disclosure Agreement* is already in place addressing Intellectual Property Protection requirements;
- Complete a *Memorandum of Understanding* with the United States Army Research Development and Engineering (RDE) Command to share source code data on simulation products developed under RDE Command contracts;
- *Memorandum of Understanding* with the University of New Mexico and the University of Hawaii to share information technology data and capabilities developed in the TeleMedicine Outreach Community Health Project. A *Non-Disclosure Agreement* is already in place addressing Intellectual Property Protection requirements; and,
- Complete a *Memorandum of Understanding* with Pennsylvania State University to share information technology data and capabilities in order to develop a unified surgical simulation platform for medical readiness training under contract with the United States Army Telemedicine and Advanced Technology Research Center.

Future Initiatives. Key initiatives planned for 2005 by the SIMCEN, in conjunction with its partners, include:

- *The SIMCEN is currently planning for the development of a Wide-Area Virtual Environment (WAVE) Concept. The WAVE is **an immersive, virtual reality environment suitable for providing realistic military medical readiness training via simulations of mass casualty, triage and/or bio-chemical training scenarios**. The WAVE would be designed to simultaneously immerse up to 22 students or medical personnel in immersive virtual reality environments. Students would be exposed to a variety of scenarios, and equally important, participate in a scenario where they can respond as an individual provider or as a member of a medical team. Further, the training scenarios could be linked via *Internet2* to other geographic locations so that other responders could participate in the same training scenario. The WAVE would be established in adjacent space (1,000 square feet) to the SIMCEN; the SIMCEN envisions using the WAVE to generate environmental features such as debris, smoke, buildings, emergency vehicles, and virtual figures to represent off-site participants, while simultaneously employing its cadre of trained *patient-actors* to simulate injured patients. Numerous scenarios could be simulated including explosive, nuclear, chemical, and biological incidents. USU has already obligated funding to plan, design, and renovate the adjacent space; Navy Facilities (NAVFAC) is coordinating with the USU Facilities Division and the SIMCEN to manage these efforts. SIMCEN staff have also collaborated with the University of Michigan and the Army Research Laboratory in Aberdeen, Maryland; as both have on-going CAVE/WAVE projects. The SIMCEN is also collaborating with the University of New Mexico and the University of Hawaii, the RDE Command, and the Research Triangle Institute to acquire existing software developed under government contract that will provide the SIMCEN with 3-D landscape and medical content suitable for use in the WAVE;*

- *Expansion of simulation technologies (live standardized patients and mannequins) into graduate medical education residencies and fellowships to provide initial, refresher, and remediation training to physicians;*
- *Comparison of video teleconferencing and live psychiatric patient interviews to determine whether video teleconferencing, web casting, or Internet-2 patient interviews are as good as live interviews; and,*
- *Further demonstration of the practical application of hand-held wireless devices, such as personal data assistants (PDAs), in a clinical setting.*

Summary. The National Capital Area Medical Simulation Center (SIMCEN) is a salient resource for the training of present and future Uniformed Services medical personnel. It provides high-fidelity clinical training in procedures and scenarios at all levels of clinical and military medicine. The SIMCEN also performs important research, aimed at pioneering new capabilities of simulation and/or validating existing technologies, to ensure they can be safely substituted for live patient experiences.

Research Administration.

RESEARCH: To be a leader in basic, clinical, and health services research to improve health care, to protect, sustain and enhance the fighting force and secure public health.

- Goal 3, RESEARCH, USU Strategic Plan.

Background. The Office of the Vice President for Research was established, in 1995, to facilitate, promote, and oversee the research activities at USU. The position of the Vice President for Research evolved through recommendations from the USU faculty. Following an extensive search, **Ruth Ellen Bulger, Ph.D., was selected as the first Vice President for Research and was appointed in March of 1996**; she served in that position until March of 2000, when she resigned as Vice President to focus on teaching and her many other professional commitments. *Michael N. Sheridan, Ph.D., Professor of Anatomy and Associate Dean for Graduate Education, subsequently served as the Acting Vice President for Research, while a national search was conducted.* **Steven Kaminsky, Ph.D., was selected as the second Vice President for Research and assumed the position in March of 2001.**

The Office of Research currently consists of eighteen full-time staff (seventeen civilians and one Army officer) who serve under the Vice President for Research. The Office of Research reviews, monitors, and coordinates approvals for all matters dealing with research at the University, to include the following: identification of potential funding sources; pre-award review and administration; grant awards and receipts; post-award administration; administration of the Human Research Protections Program, to include administrative support of the University's Institutional Review Board (IRB); and, monitoring of all regulatory compliance requirements. The Office of Research (REA) provides service to three communities: the University as an institution; USU faculty and student investigators; and, the more than 100 funding entities that support research at the University.

The Office of Research manages the Intramural Grant Program and provides administrative support for the SOM Research Merit Review Committee, which conducts peer review of all faculty applications for intramural funding. ***During 2004, the USU Intramural Program was funded at \$2.4 million*** for USU student and faculty researchers. ***The intramural portfolio consisted of 66 protocols with special military interest, 38 awards for clinical research, and two projects in areas of educational research.*** Standard USU awards for both military-relevant and clinical research were supported at a minimum of 90 percent of the budget requested. In addition, nine new faculty members were awarded special funding. The 2004 USU Student Research Programs supported the work of 2 medical students, 10 students in the Graduate School of Nursing, 42 candidates in the Master of Public Health Program, and 20 candidates in the Ph.D., MSPH, MPH, or Dr.PH Graduate Education Programs. Student applications are reviewed by a faculty committee in each student's area of study and by the appropriate Dean.

The Office of Research similarly oversees ***thirteen multi-site, Congressionally-funded research programs, with FY2004 funding totaling \$65,000,000***: 1) the TriService Nursing Research Program; 2) the Center for Prostate Disease Research; 3) the Defense Brain and Spinal Cord Injury Program; 4) the Coronary Artery & Prostate Disease Reversal Program; 5) the Clinical Breast Care Program; 6) the Post-Polio Research Program; 7) Comprehensive Neuroscience; 8) the United States Military Cancer Institute; 9) Congressionally-Directed Humanitarian Assistance Medicine; 10) Military Complementary & Alternative

Medicine; 11) the Anti-Radiation Drug Development Center; 12) Integrative Healing Practices for Veterans (VetHeal); and, 13) the Gynecological Cancer Center. ***Together, these programs support more than 180 individual research projects conducted at USU and elsewhere.***

During 2004, extramural funding for research at USU totaled \$58,393,192, and included 136 projects supported by Federal organizations such as: the National Institutes of Health (NIH); the National Science Foundation (NSF); the Department of Energy (DOE); the United States Army Medical Research and Materiel Command (MRMC); the Office of Naval Research (ONR); and a wide array of private and international foundations. These investigations explored a variety of scientific areas, including basic biomedical questions central to the mission of the Military Health System: the mechanisms, transmission, and control of a wide range of infectious diseases; a variety of crucial topics in combat casualty care, operational medicine, and health education and promotion; Defense women's health issues; and, the development of new methods for the diagnosis and treatment of medical problems faced by the United States military and their dependents. ***Thus, 2004 funding for the USU Intramural, Extramural, and Congressional Research Programs totaled approximately \$126 million, with over 400 active projects and hundreds of resulting publications.*** (See Appendix C for examples of the achievements and recognition awarded to individual USU researchers.)

USU Researchers Investigate Diseases of Special Interest to the Military. A wide array of research protocols at USU investigate specific disease threats faced by the Military Health System in its efforts for the sustainment of the Armed Forces, during peacetime and deployment under combat conditions. These projects all supported the essential military mission by advancing the understanding of both the transmission and the internal mechanisms of a spectrum of pernicious and/or common diseases that may be faced by warfighters. These research projects are expected to provide equally important applications in the growing effort devoted to homeland defense; the understanding gleaned by USU researchers will open avenues to better control, diagnosis, and treat natural and man-made biological threats, both at home and abroad. For example, malaria is endemic in many areas where the military deploys its fighting forces; technological advances conducted by USU researchers have made it possible to predict mosquito population levels and transmission risk for a range of mosquito-borne diseases such as malaria, even within precise areas and timeframes. By using satellite imaging and remote sensing devices, researchers assist in predicting high-risk locations for the occurrence of malaria and similar diseases. These predictions focus disease control operations and conserve scarce resources as well as human capital. Infectious diseases studied at USU have included, or continue to include, the following: malaria; Venezuela equine encephalitis (VEE); leishmaniasis; E. coli, H. pylori; and, bartonellosis. Examples of additional disease-related research have included: identification of previously unknown bacterial virulence genes; and, analysis of the genesis and pathology of various types of virus.

USU Research and Combat Casualty Care. Research conducted by USU faculty in the area of combat casualty care has enhanced the provision of rapid diagnostic methods and treatments that ensure military readiness, excellent care for deployed forces, and the rapid return of the injured and sick to active duty. Protocols, dealing with combat casualty care, have focused on the following areas/examples: the exploration of the pain-control mechanisms that underlie established treatments, such as morphine; the provision of groundwork for effective strategies to limit nerve damage and to encourage nerve regeneration; and, the identification of possible causes of life-threatening complications resulting from the combination of exertion and injury that are common under heavy battle conditions.

USU Research Strengthens Military Operational Medicine. USU researchers, in the area of operational medicine, advanced the understanding of, and the ability to manipulate, the physiological mechanisms of stress and immunity; human sleep and seasonal cycles; and, the neurological changes underlying short- and long-term memory. These discoveries should: enable warfighters to stay awake longer with fewer detriments to performance (*this USU research was recognized by Science as one of the top ten scientific breakthroughs of 2002*); lead to better strategies for enhancing and preserving memory and reasoning capabilities under battlefield conditions; help the Uniformed Services and Veterans Affairs to understand, and ultimately prevent and treat, neuropsychiatric illnesses such as depression and post-traumatic stress disorder; and, assist deployed troops and their families to better prepare for, and contend with, the significant, common stressors of military operations.

Support for the 11th Faculty Senate Research Day, School of Medicine Graduate Student Colloquium, and the Graduate School of Nursing Research Colloquium. For the first time, the annual Faculty Senate Research Day and the School of Medicine Graduate Student Colloquium were formally joined with the Graduate School of Nursing Research Colloquium. Activities for all three events, held on the USU campus on May 12-13, 2004, centered on the theme, ***Operational Readiness: Research for Best Practices***. The two-day meeting brought nearly 300 individuals to the USU campus, including researchers from area affiliates such as the National Naval Medical Center, the Walter Reed Army Medical Center, the Armed Forces Institute of Pathology, the National Institutes of Health, American University, Georgetown University, George Washington University, the Howard Hughes Medical Institute, the Washington Hospital Center, and the Centers for Disease Control and Prevention, as well as other prominent government agencies, universities and hospitals.

Enhancement of Administrative Services. During 2004, the Office of Research Administration (REA) expanded its regular meetings with the Research Administrators from all of the USU departments, to address specific topics of interest to researchers and their support staff. The REA staff and departmental Research Administrators continue to meet regularly to: identify and resolve problems; examine the processes for the submission, review, and administration of grant applications; and, strengthen their working relationships. ***REA staff also meets at least monthly with the Sponsored Project Office of the Henry M. Jackson Foundation for the Advancement of Military Medicine, which provides administrative services for more than 80 percent of USU's extramurally-funded projects.*** In addition, REA and the Vice-President for Resource Management conducted a two-day workshop on University acquisition procedures using grant funds, to include reviews of approval chains, ordering processes, and using the University's financial tracking system to monitor individual orders.

Since 2001, ***the Vice President for Research has conducted a series of weekly workshops that provide sustained, focused instruction and peer critiques for junior and mid-career faculty engaged in writing applications for extramural funding.*** Workshop sessions address the specific skills and expertise required to complete each section of the typical grant application, to include: writing the abstract for the grant proposal; summarizing the scientific background for the area of interest and proposed approach; developing the hypotheses and specific aims; presenting preliminary results; outlining experimental design and methodology; and, planing an appropriate statistical analysis. ***Five such workshops were conducted in 2004***, with a special series for post-doctoral fellows.

The REA Home Page. The REA home page, <www.usuhs.mil/research>, supplies pertinent, up-to-date, user-friendly information on both intramural and extramural grant opportunities, as well as, the

capability to download a wide range of application and insurance forms. The Research Development Program now provides access to *ResearchResearch*, a database listing hundreds of funding opportunities available worldwide to faculty, post-doctoral fellows, clinical fellows, and students. In addition, *ResearchResearch* includes tips on grantsmanship, from matching research interests with a wide range of appropriate funding sources, to writing more successful applications.

Institutional Review Board. The Program for the Protection of Human Participants in Research and the USU Institutional Review Board (IRB) jointly ensure the protection of human volunteers, who participate in research projects at USU and its affiliates, from research risks. The Program's administrative staff, which functions as a part of the Office of Research, reviews each protocol with human subjects that is conducted at the University or by a member of the USU faculty or student body to ensure that:

- The research complies with the DoD and other Federal regulations standards of DoD;
- Potential risks to the subjects are minimized by the research design and do not outweigh the actual benefits of participation;
- Appropriate processes for obtaining informed consent from potential subjects are in place, adequate to the backgrounds of the volunteer population as well as the research design, not coercive, and respectful of the needs of the individual volunteers; and,
- The documents produced during the consent process and the conduct of the research protocol are maintained in accordance with standard scientific practice and Federal regulations.

Each research project, following staff review and recommendations, is presented to the full IRB at its monthly meeting. In 2004, the IRB reviewed and approved the following: 171 initial proposals for human subject research; 169 amendments to protocols already underway; and, 230 annual or semi-annual reviews of continuing projects. A second IRB coordinator was added to assist with the growing number of reviews and approvals. The IRB meets at least once a month, with additional, *ad-hoc* meetings, as required, over the course of each year. It is composed of 19 voting members, including eight physicians, one basic scientist, three social/behavioral scientists, one nurse scientist, one medical ethicist, the USU Chaplain, the SOM Commandant, an enlisted soldier, and two other representatives from the non-scientific USU community. Two of the physicians have a law degree and basic science doctoral degree. Fifteen are drawn from the USU faculty and staff; one is from AFRRI; two are employed by NIH; and, one is assigned at WRAMC. Two *ex officio*, non-voting members provide coordination and staffing and attend each meeting: the Assistant Vice President for Research; and, a member of the USU Office of the General Counsel.

A separate Institutional Review Board for the United States Military Cancer Institute (USMCI), formally approved on January 14, 2002, continues to develop as the Institute's protocols acquire scientific approval at the member institutions. The USMCI IRB draws its members from the University and its affiliated medical centers: the National Naval Medical Center; the Walter Reed Army Medical Center; the Armed Forces Radiobiology Research Institute; and, the Malcolm Grow Medical Center. The USMCI IRB ensures that its member institutions and their physicians, dentists, nurses, and other health care providers pursue oncology research in compliance with Federal regulations and accepted ethical standards of scientific conduct. Protocols conducted under the auspices of the USMCI are designed not only to improve the quality of patient care, but also to contribute to better staff education and training.

Independent Reviews Validate the Outstanding Support Provided by the USU Human Research Protections Program and the USU IRB. *A review of the USU IRB Program was conducted, during June of 2004, by the Office of the Deputy Assistant Secretary of Defense for Health Affairs (Force Health Protection and Readiness) and by the Director, Defense Research and Engineering, Assistant Secretary of Defense for Acquisition, Logistics and Technology. These reviews found no significant deficiencies, and the REA staff has since been expanded to accommodate the growing number of protocols requiring IRB review. In addition, the Food and Drug Administration (FDA) has cognizance over Federal IRB Programs where research is conducted with investigational new drugs and devices. Because some USU research falls into this category, the FDA has the authority to audit the entire USU program. **Between February 3 and 6, 2004, an FDA inspector conducted an audit of the USU Human Use Program and the USU IRB.** The audit included a review of IRB minutes from 2003 and 2004, plus a random sampling of the IRB files on FDA-regulated protocols with a greater than minimal risk to human subjects. **The USU IRB Program was found to be in full compliance with the governing regulations (Title 21, Code of Federal Regulations, Parts 50 and 56) with no need of corrective action by the Division of Scientific Investigations, Office of Medical Policy, Center for Drug Evaluation and Research of the FDA.** During 2001, USU also obtained a Federal-Wide Assurance from the Department of Health and Human Services (HHS); in 2004, USU began the process of updating its DoD Assurance and Compliance. Each assurance sets out USU's institutional responsibilities in the protection of human subjects to include: 1) standards for the initial and continuing review of research protocols; 2) requirements for the prompt reporting of information required by each Federal agency, to include the suspension or termination of any study due to non-compliance with regulations or unexpected, serious harm to a research volunteer; and, 3) guidelines for the appropriate training and educational requirements for IRB members, USU investigators, and administrative staff. *The audits conducted by the Offices of the Deputy Assistant Secretary for Health Affairs and the Director, Defense Research and Engineering, in June of 2004, and the FDA in February of 2004, combined with the Federal-Wide Assurance from HHS, during 2001, and the current DoD Assurance of Compliance, have validated the outstanding support rendered by the USU Human Research Protections Program and the USU IRB.**

The 11th Faculty Senate Research Day, School of Medicine Graduate Student Colloquium, and the Graduate School of Nursing Research Colloquium. For the first time, the annual Faculty Senate Research Day and the School of Medicine Graduate Student Colloquium were formally joined with the Graduate School of Nursing Research Colloquium. Activities for all three events, held on the USU campus on May 12-13, 2004, centered on the theme, ***Operational Readiness: Research for Best Practices***. The two-day meeting brought nearly 300 individuals to the USU campus, including researchers from area affiliates such as the National Naval Medical Center, the Walter Reed Army Medical Center, the Armed Forces Institute of Pathology, the National Institutes of Health, American University, Georgetown University, George Washington University, the Howard Hughes Medical Institute, the Washington Hospital Center, and the Centers for Disease Control and Prevention, as well as other prominent government agencies, universities and hospitals.

Both the School of Medicine Graduate Student Colloquium and the Graduate School of Nursing Research Colloquium were held on the USU campus on Wednesday, May 12th. As the culminating event that day, the USU President hosted a University-wide President's Poster Session and Reception, featuring ten posters selected for the quality of the research, clinical and/or operational significance, and presentation. The 2004 Graduate Student Colloquium featured a career development workshop on job opportunities for graduate students; student poster and platform presentations; and, the ***2004 John W. Bullard Lecture***.

The 2004 Bullard Lecture, *Transcription Factors and Cancer*, was presented by **James E. Darnell, Jr., M.D., Vincent Astor Professor at The Rockefeller University**. The SOM Graduate Student Colloquium, established in 1980, promotes scholarly interchange between SOM graduate students and the academic community at USU, as well as, recognizing the research achievements of current SOM graduate students. The Graduate School of Nursing Research Colloquium, now in its fifth year, consists of platform and poster presentations by students in the Graduate School of Nursing. In 2004, GSN presentations were divided into three sessions: Operational Readiness; Clinical Decision-Making in the Federal Health Care System; and, Population Health & Outcomes. The all-day session culminated in an awards ceremony for the school, including research and teaching awards for both faculty and students.

The 11th Faculty Senate Research Day was held on Thursday, May 13, 2004. **Eric B. Schoomaker, M.D., Ph.D., BG, MC, USA, Commanding General for the Southwest Regional Medical Command and Eisenhower Army Medical Center, as well as Lead Agent for TRICARE Regions 3 and 15**, delivered the plenary lecture. Doctor Schoomaker's long association with the University includes an assignment as a USU faculty member, in the Department of Medicine, during the 1990s. His talk entitled, *Operational Readiness and USUHS: From Basic & Behavioral Science to Emerging Best Practices*, focused on the role that USU is particularly suited to play in conducting research that draws on a wide range of scientific results and has relevance for present needs across the Services. The Research Day Program also included both poster sessions on the full range of clinical, basic science, behavioral, and public health research at the University and panel discussions on topics such as *Rehabilitation, Restoration of Function, and Return to Duty, All You Need to Know About Specimen Storage, Databases, & Future Use, Cancers in the Military Population, Deployment Experiences: Lessons Learned, Emerging and Re-Emerging Infectious Diseases*, and *Mission-Based Proteomics*.

USU Center for Laboratory Animal Medicine. The Center for Laboratory Animal Medicine (LAM) is responsible for the humane care, use, and welfare of research animals, in accordance with all Federal and Department of Defense (DoD) regulations and guidelines, the *Guide for the Care and Use of Laboratory Animals*, as well as, USU Instruction 3204, *The Use of Animals in the USUHS*. Oversight of the Animal Care and Use Program (ACUP) is provided by the Institutional Animal Care and Use Committee (IACUC). There were 260 active research protocols supported, in 2004.

On November 5, 2002, the USU Center for Laboratory Animal Medicine received confirmation of continued accreditation from the Council on Accreditation of the Association for the Assessment and Accreditation of Laboratory Animal Care, International (AAALAC). AAALAC is a private, non-profit organization that promotes the humane treatment of animals in science through a voluntary accreditation program. AAALAC's voluntary accreditation process is a way in which animal research programs demonstrate that, they not only meet the minimum standards required by law, but are exceeding those standards to achieve excellence in animal care and use.

The Council on Accreditation of the AAALAC has reviewed the report of the recent site visit to USUHS... The Council commends you and your staff for providing and maintaining a high quality program of laboratory animal care and use. Especially noteworthy were the commitment and dedication of personnel at all levels, the Institutional Animal Care and Use Committee's program oversight and monitoring, the outstanding husbandry practices, and the well maintained facilities. In addition, development of the rodent breeding database and

efforts focused on environmental enrichment were commendable. The Council is pleased to inform you that the program conforms with AAALAC International standards as set forth by the Guide for the Care and Use of Laboratory Animals, NRC, 1996. Therefore, FULL ACCREDITATION shall continue.

AAALAC will conduct the next accreditation inspection of the USU Animal Care and Use Program, in the Spring of 2005.

Background. The Center for LAM is divided into four Divisions: the Animal Husbandry Division (AHD); the Veterinary Medicine Division (VMD); the Veterinary Surgery Division (VSD); and, the Veterinary Pathology Division (VPD). The LAM staff includes three military veterinarians, nine United States Army Animal Care Technicians (91Ts), five United States Navy Surgical Technologists, three United States Navy Medical Laboratory Technicians, and a civilian professional and technical staff of twenty-four individuals. ***During 2004, a total of four personnel from the VMD and one employee from AHD achieved advanced certifications and, in one case, a Masters Degree.***

Heating, Ventilation and Air Conditioning (HVAC) renovations began, in July of 2003, in the main side of the Central Animal Facility (CAF). For the remainder of the renovation, laboratory animals were housed on the G-200 side of the CAF. During this period, animal census was down by approximately 20 percent; the cagewash was down and cages were washed by hand (*approximately 500 cages per week*); a refrigerated truck was rented for the disposal of animal carcasses; and, all animal surgeries were conducted in the Center for Multidisciplinary Services (MDL) and in the Department of Surgery's surgical suite.

Even with the on-going HVAC renovations, during 2003, and the first quarter of 2004, the USU Veterinary Surgery Division (VSD) of the Center for Laboratory Animal Medicine provided surgical training support to qualified USU faculty, supporting both the teaching mission and research protocols. In 2004, a variety of significant teaching laboratories were conducted. There were a total of twenty-four laboratories attended by 662 personnel, using 334 animals. Additionally, 103 procedures, using 91 animals, supported five research protocols. These laboratories provided students with invaluable experience working with biological tissue; and, ***the laboratories were frequently reported by the medical students to be one of their most valuable learning experiences.*** The teaching laboratories provide the students with the opportunity to gain experience in basic surgical skills and the proper handling of tissue, among other critical techniques. These skills help the students to more effectively function during their future residencies and in the practice of medicine. Also, in the event that as military physicians they will be deployed under battlefield conditions, the familiarity and heightened skill level afforded by the teaching laboratories can prove to be of significant value. Students are exposed to a combination of training techniques prior to specific training on the use of animals. The use of computer simulation and mechanical surgical simulation devices complements the students' surgical training experiences and also reduces the number of animals required to provide the necessary training. Navy corpsmen staff the VSD. Personnel trained or supported by VSD include surgeons, as well as students. The corpsmen also contribute significant preoperative and monitoring skills to all of the teaching laboratories of the Center for Multidisciplinary Services (MDL). ***An assignment to USU has been found to tremendously broaden the experience of the corpsmen and to afford a unique training opportunity through the combination of human surgical skills with current veterinary technology.***

In 2004, the Veterinary Medicine Division (VMD) was responsible for the following: veterinary medical diagnosis; the treatment and care of all USU animals; initiating and accomplishing programs for

monitoring animal health status and programs for animal quarantine; and, providing animal handling and care assistance to the investigators. VMD monitors on-going projects for compliance with USU guidelines, participates in pre- and post-surgical preparation and care of laboratory animals, and provides a training program for its personnel. ***VMD also prepares and presents training courses in: laboratory animal research techniques; animal care comparative medicine; zoonotic diseases; and, the inventory and procurement of veterinary equipment.*** VMD personnel initiate and/or participate in research projects that have been approved following established academic guidelines.

The Veterinary Pathology Division (VPD) was responsible for: operating the University's centralized diagnostic laboratories; providing gross anatomic, histopathologic, and clinical pathologic laboratory support for LAM and USU investigators from both the basic and clinical science departments; consultation services for research personnel in reference to the diagnosis of infectious and/or zoonotic disease; support for AFRRI, as appropriate; and, the selection of outside laboratories required for specialized tests. VPD also interprets laboratory results and makes recommendations for further testing, if indicated, and informs researchers of abnormal results that may affect the outcome of their research. ***VPD participates in, and supports, the University's teaching programs for medical students, graduate students, research technicians, and animal care technicians.*** To more effectively accomplish its mission, VPD is subdivided into a Histopathology Section and a Clinical Pathology Section. ***The VPD laboratory is certified by the College of American Pathologists (CAP).***

The Animal Husbandry Division (AHD) was responsible for providing animal caretaking services. AHD performs daily feeding, watering, and cage changing, to include animal care on weekends and holidays. AHD personnel submit and follow up on facility and equipment work orders; and, they are responsible for daily monitoring of the sterilization, sanitization, refrigeration, HVAC, and cleaning equipment systems. Additional equipment operated and maintained by the AHD include microisolator caging systems, laminar flow racks, Thoren units, and Horsfal isolation units. ***AHD is responsible for animal ordering, tracking, and housing upon animal receipt.*** AHD is also responsible for ordering the feed, bedding, personal protective equipment, chemicals, caging and caging accessories as necessary to perform the animal care mission. AHD personnel also perform the animal census or inventory.

The animal caretakers observe animals and facilities during their animal husbandry procedures; ***veterinary technicians perform rounds on all rodent rooms once daily, and all large animal rooms twice daily, to include weekends and holidays.*** All incidents of animal sickness or poor health are reviewed by a veterinarian. Generally, the veterinary technicians perform most medical treatments under the direction of a veterinarian. ***LAM veterinarians are always present and may directly participate, when medical treatments/procedures involve extensive animal care or if anesthesia is required.***

USU Barrier Facility. A rodent barrier facility occupying approximately 2,558 square feet within the USU Central Animal Facility is capable of housing 6,000 mice. This resource was conceived and developed by the Vice President for Teaching and Research Support and veterinarians from the Center for Laboratory Animal Medicine, along with input from the USU Institutional Animal Care and Use Committee, and interested USU investigators. The facility, opened during 1999, is equipped to accommodate the needs of USU investigators whose protocols require that research animals (rodents) be kept under ultra clean conditions. Ultra clean conditions are necessary to reduce the chance of pathogen exposure, which could have devastating effects on research goals and potentially result in the waste of animal lives, investigators' time, and related resources. The facility is also intended for the housing of transgenic mice (mice that have

been altered genetically to simulate disease states or modified biochemical conditions).

The Barrier Facility includes one full-time technician who is specifically trained in transgenic techniques and is capable of producing transgenic animals; the technician monitors animals housed within the barrier and is responsible for: 1) written entry procedures (which include the use of personal protective equipment) and the restriction of non-essential personnel; and, 2) the conduct of training on barrier-housed animal handling procedures. Equipment acquisitions in support of the barrier include ten ventilated cage racks and a controlled-rate freezer for the cryopreservation of crucial reproductive elements (mouse embryos, eggs, and sperm). The controlled-rate freezer is state-of-the-art, permitting the long-term storage of frozen mouse embryos. ***Once a transgenic or other valuable mouse line is developed, the cryopreservation technique keeps that line viable without having to house large numbers of breeding animals to maintain the line.*** When a particular mouse line is required, the embryos are thawed, implanted, and normal breeding of the line continues. ***This saves a tremendous amount of space and resources that would normally be required for maintaining a breeding colony.***

Center for Environmental Health and Occupational Safety. The mission of the USU Center for Environmental Health and Occupational Safety (EHS) is to provide a safe and healthful environment for all students, faculty, staff, and visitors. Medical education and research involve the purposeful and safe use of hazardous materials, including chemical, biological, and radiological agents. The Center is composed of three divisions: the Occupational Medicine Division; the Radiation Safety Division; and, the Industrial Hygiene and Environment Division.

In 2004, initiatives were taken to further improve the functionality of the Center. The University Safety Officer was realigned directly under the Director of EHS, where he coordinates all EHS provided safety training from one office. The EHS environmental software suite was upgraded to an SQL platform, greatly enhancing the functionality and increasing the speed of the EHS information system. An information system technician monitors and maintains the system and interfaces with researchers, thereby better serving the University requirements for inventory control, training, and medical surveillance. Several staff members participated in continuing training in biological safety, mishap and accident investigations, regulatory compliance, and in the handling and transportation of radioactive materials.

Radiation Safety Division. In July of 2004, **Major Dan Hamilton, USA, Medical Service Corps,** reported to USU as the Radiation Safety Officer and Deputy Director of EHS. Major Hamilton was also assigned as the Center for Disease Control (CDC) and Prevention Select Agent Responsible Official for the University. Under his leadership, the Radiation Safety Division continues to provide the highest quality of radiation protection support to USU and all researchers working with radioactive materials. ***In November, the Nuclear Regulatory Commission (NRC) conducted an unannounced inspection of all USU NRC licenses. To the credit of the Radiation Safety Staff, there were no violations noted in any USU NRC licensed activities.*** The inspectors voiced accolades concerning the excellent management and operation of the Radiation Safety Division. ***Additionally, an audit of the CDC Select Agent Program was also conducted with no adverse findings.***

Occupational Medicine Division. This Division conducts Medical Surveillance and other Occupational Health Programs in a variety of occupational areas including animal care, pregnancy, hearing conservation, laser eye safety, immunizations for laboratory and health care workers, treating and tracking occupational injuries, ergonomics, blood borne pathogens, wellness programs, and biological safety. The Division is also instrumental in providing training in the above mentioned areas and has made significant improvements in training materials; other organizations have asked to use the training materials prepared by the USU Occupational Medicine Division. The Division also provides excellent management of the University Pharmacy Program and the Drug Enforcement Agency regulated Controlled Substance Programs. The Occupational Medicine Division issues pharmaceuticals and controlled substances to authorized USU researchers for use in research protocols. The Division maintains outstanding oversight over these essential programs and, in 2004, completely revised all relevant instructions, which provides increased clarity and improved program audit procedures.

Industrial Hygiene and Environment Division. This Division provides essential industrial hygiene and environmental support to approximately 1,700 USU faculty and staff and approximately 300 laboratories. Programs include: Workplace Surveillance; Chemical and Regulated Medical Waste Management; Hazardous Communication and Laboratory Chemical Hygiene Training; and, Regulatory Compliance Assistance. Improvements in monitoring equipment and scheduling were accomplished and an increased number of workplace surveillances were performed to detect potential exposures to various chemicals, dust, and gases and to ensure personnel safety. The Division ensured that the University complied with all environmental laws by successfully managing the disposal of an increase in the amount of hazardous waste from the previous year. The State of Maryland's Biannual Hazardous Waste Management Report was accurately completed and submitted prior to the reporting date. The Division also worked diligently to ensure that the University complied with the State of Maryland's Waste Water Permit requirements; an on-site State inspection was successfully passed. The area of information management was improved by adding a staff member to manage a key data base program, as well as the EHS Center's Web Site. In 2004, two members of the staff were recognized for their professionalism and dedication by their selection as Service Members of the Quarter.

SOM Department of Psychiatry Sponsors a Collaborative Relationship with the Stanley Laboratory of Brain Research.

The Stanley Brain Bank, part of the Stanley Medical Research Institute, is made possible through the generous funding of the Theodore and Vada Stanley Foundation. The Brain Bank is part of the School of Medicine Department of Psychiatry of the Uniformed Services University of the Health Sciences and is located on the grounds of the National Naval Medical Center in Bethesda, Maryland. The Stanley Brain Bank has 500 specimens; in addition to using the tissue for its own research, the Stanley Brain Bank has sent over 100,000 sections and blocks to 120 research groups around the world. At most national and international research meetings on schizophrenia and bipolar disorder, at least half of the presentations and posters on neuropathology reflect work utilizing tissue from the Stanley Brain Bank.

- **E. Fuller Torrey, M.D., Associate Director for Laboratory Research, the Stanley Medical Research Institute, *Stanley Brain Bank Newsletter*, No. 10: Spring 2002.**

Background. In February of 1999, during a ribbon-cutting ceremony, the University President welcomed the Stanley Laboratory of Brain Research to the SOM Department of Psychiatry. Through a Memorandum of Agreement with the University, the School of Medicine, and the Stanley Medical Research Institute, the USU community now has access to the Stanley Laboratory's brain specimens from individuals who suffered from diseases such as schizophrenia, bipolar disorder, and severe depression - the largest of such collections in the World. The Stanley Medical Research Institute Brain Bank and Neuropathology Consortium is made possible through funding from the Theodore and Vada Stanley Foundation. Its purpose is to collect postmortem brain tissue and to distribute it, without charge, to research groups working on schizophrenia and bipolar disorder (manic-depressive illness).

Current Activities. **E. Fuller Torrey, M.D.**, and his research group continued to provide outstanding expertise to the University, throughout 2004. The Stanley Foundation postmortem brain collection for research on schizophrenia and bipolar disorder has over 600 specimens; the Stanley Laboratory has distributed more than 160,000 sections and blocks of tissue to 160 research laboratories world-wide that are conducting research on these diseases. Some 55 large freezers contain the collection located at the Brain Research Laboratory. The specimens are approximately evenly divided among individuals who were diagnosed with schizophrenia, bipolar disorder (manic-depressive illness), severe depression, and normal controls. Most of the specimens are provided to researchers doing research on schizophrenia, bipolar disorder or depression. For example, during 2000, the Stanley Foundation donated a normal control specimen to a World Health Organization project dedicated toward the establishment of worldwide standards for brain tissue for comparison with prion-caused diseases such as Creutzfeldt-Jakob Syndrome. On April 9, 2001, The Washington Post featured Doctor Torrey in an article entitled, *Thinking Outside the Box*. The article included the following statement: ***The Stanley Foundation is supporting a quarter of the research on schizophrenia and half of the research on manic-depression in both the United States and Europe.*** In 2002, Doctor Torrey received the *William C. Porter Lecture Award* from the Association of Military Surgeons of the United States (AMSUS).

When the Stanley Foundation initially assumed responsibility for the Neuropathology Consortium, it looked forward to the day when it would have hundreds of measurements on the same parts of the brain from many different laboratories. That task is being addressed through the work of **Doctor Michael Knable** who is assessing over 1,000 markers of brain function in the prefrontal cortex, cingulate, hippocampus, and superior temporal area. Many abnormalities from this study have already been published in Brain Research Bulletin (Volume 55, pages 651-659, 2001) and Clinical Neuroscience Research (Volume 2, pages 171-181, 2002); other publications are in progress.

In May of 2001, Morley Safer of *60 Minutes* interviewed Doctor Torrey with a focus on his research on schizophrenia and bipolar disorder. That interview was featured on the April 21, 2002 edition of *60 Minutes*. Doctor Torrey co-authored the book, Surviving Manic Depression: A Manual on Bipolar Disorder for Patients, Families and Providers (published by Basic Books, 2002) and The Invisible Plague: The Rise of Mental Illness from 1750 to the Present (published by Rutgers University Press, 2002). During 2003, he was profiled in the Princetown Alumni Weekly and the Stanford Magazine.

Information Technology.

Background. During 1994, committees were formed at the University by the School of Medicine and the Faculty Senate to address USU's future use of computers and technology in general. With the rapid development of Information Technology (IT) and Medical Informatics at USU in mind, the University President sent a delegation of seven USU representatives to the American Association of Medical Colleges (AAMC) Information Technology Conference. The conference served to reinforce the University's inclusion of computer-assisted communication and technology within its strategic planning process. With support from the leadership at USU, strategic goals were developed so that Medical Informatics would be utilized to emphasize distance learning, continuing medical education, computer-assisted medical education, access to medical databases, and other medical information systems. The focus of those efforts, in accordance with the University's mission, would be on the unique educational requirements of military and disaster medicine. ***In October of 1997, a number of USU information technology-related committees were combined to form the Automated Information Systems Policy Committee (AISPC). This committee met, as required, to review guidance and objectives, identify resources, develop requirements, and plan information technology policy strategies and training.***

Overview of Activities in 2004. On-going activities and improvements reported, during 2004, include the following: ***Servers:*** Administrators can now schedule unattended back-ups for ten production servers from one central location. ***Network:*** In support of the Bethesda Naval Base, a convergence on the connection to the Internet Cloud was moved from a commercial connection to the DISA connection. ***Enterprise Database:*** The USU Corporate Database has approximately 235 database tables and is populated with more than 950,000 records that can be utilized to analyze and measure organizational performance. ***University Webpage:*** A new USU Web Site Search Engine is available. ***Training:*** The UIS Training Officer updated the *UIS User's* and *Quick Reference Guides* and delivered training developed from those guides. ***Desktop Computers:*** UIS managed a three-year technology refreshment cycle for 1,037 leased desktops within the University. ***Centralized Software and Support:*** UIS managed all of the USU supported software for the central computing facilities and utilized push technology for security and software updates. ***Teleconferencing:*** UIS substantially improved systems for up and down links for USU's

video teleconferencing systems. **Wireless Network:** A wireless network was implemented, supporting both research and teaching requirements. **Information System Security:** The Information Systems Security Officer (ISSO) played a major role in identifying systems with security deficiencies. **UIS Professional Training:** UIS personnel continue to receive certifications and training (e.g., Network, Security, LAN, Wireless, Oracle, Supervisory, etc.) throughout the various UIS Branches.

Customer Support. During 2004, the University Information Services Management Center (UIS) provided continuous service to the University's faculty, students, and staff who work diligently to ensure medical readiness for the Military Health System. **UIS support included: service for approximately 3,000 information systems users; e-mail access; remote dial-in accounts; Internet Protocol (IP) and IP2 connections, satellite; software applications that support the University's core business processes; 1,500 dial-in-users; 2,236 voice and fax telephone lines; and, 1,400 voicemail systems located on and off campus, at the National Naval Medical Center, other DoD facilities, and some non-DoD facilities.**

Desktop Computers. Following guidance from the Office of the Assistant Secretary of Defense for Health Affairs (ASD/HA), a plan to lease desktop computers by the University was implemented in 1998. The plan calls for all basic office automation and teaching computers to be replaced with leased systems. **During 2004, the UIS Helpdesk deployed over 50 additional new leased systems; implemented tasks to replace 342 existing systems that will be deployed, in Fiscal Year 2005; and, performed annual inventory for 1,037 systems under the University's desktop computer-leasing program.** UIS reduced the leased computer refreshment cycles from four to three, through consolidation. The leasing program continued to provide standardization, technology refreshment, enhanced budget planning, compatibility, and improved user support.

Internal network servers are now running the Microsoft SUS product, allowing UIS to push software security patches, along with common software updates, from a central location, to the user's desktop. **UIS continues to manage \$677,000 in contracts to support the leased machines and \$300,000 to support software licenses for the central computing facilities.**

Helpdesk. A set of desktop tools, also based on ASD/HA guidance and USU requirements, was recommended by the AISPC and approved by the USU President. In addition, the University signed an agreement under a Maryland State Educational Contract (the Maryland Enterprise Educational Consortium (MEEC) with the Microsoft Corporation that provides site licenses at significantly reduced educational rates. This agreement allows the UIS Helpdesk to make the latest Microsoft software available to all faculty, staff, and students. **The selection of a single set of desktop tools has greatly simplified user support and improved the Helpdesk response. During 2004, the Helpdesk processed 7,979 service requests for the Information Resource Management Center (UIS), of which, 3,701 calls were assigned and resolved by the Helpdesk Branch.** The UIS Helpdesk continued to test, deploy, manage, and provide support for Microsoft and other standard desktop products. In efforts to continually provide excellent customer support service, enhance the quality of service, and keep users abreast of IT related topics, the Helpdesk provided: weekly computer tips to users, along with virus alerts, resolutions and protection; responded to more than 340 virus calls; electronically notified USU customers of receipt of service requests for tracking purposes; and, acquired privileges to reset LAN and Root Domain passwords, without delay, thereby reducing turn-around time.

During the latter part of 2004, *the Helpdesk implemented modules of the existing call tracking system (HEAT) to increase UIS internal communication and ultimately provide a quicker response to the USU users. This tool provided all branches of UIS with a means to: expeditiously flag tickets; and, obtain and report information regarding network, security, virus, and/or software problems that are reported, either internally by staff, or externally by users.* Other call tracking projects included the web-based call tracking tool (*iHeat*), which works in conjunction with the existing client tracking system. This tool allows technicians and managers to access records from any web location versus the desktop client.

Other Helpdesk accomplishments, during 2004, included: IP tracking and maintenance of the database; and, providing application requirements to the Software Development Team, in order to integrate isolated databases into a central location to be shared and associated with other related records. The Helpdesk staff participated in in-house training on standard operating procedures and off-site training to acquire professional certification to better service its customers.

Software Development. During 2004, *the Information Engineering Branch (IEB) provided continuity in the development of core business applications and populating data in the USU Corporate Database. To date, the Oracle Enterprise Database has approximately 235 database tables and is populated with more than 950,000 records that can be utilized to: assist in the process of quantifying the medical and military professional accomplishments of USU medical school graduates; measure organizational performance; and, analyze data for study purposes.* Many of the Enterprise applications support the USU, the Academic Center for the Military Health System. The Enterprise Database is designed to track people, processes, and property at the University. Benefits include: central data repository; standardization; as well as, information that can be shared by students, faculty, and staff.

In 2004, *the IEB successfully developed and deployed components of a client/server and web based application for the Center for Laboratory Animal Medicine (LAM). As an integral component of the USU Corporate Database, it is designed to electronically process administrative functions, such as protocol management and Institutional Animal Care and Use Committee (IACUC) tracking.* It also tracks animal protocols, animal orders, deliveries, animal census, supplies, and per diem costs. The LAM system is very complex and is comprised of five modules: Institutional Animal Care and Use Committee (IACUC)/Protocol Management; Animal Husbandry Division (AHD); Veterinary Surgery Division (VSD); Veterinary Medical Division (VMD); and, the Veterinary Pathology Division (VPD). This software application compiles daily charges for journal voucher reporting and interfaces with the CUFS financial System. The new LAM application consolidated and replaced the LAM Legacy System, in addition to, a PC based database. In support of the UIS wireless project that will provide LAM with a dedicated wireless network, the IEB modified the Veterinary Medical Division module of the LAM application to accommodate monthly reporting for vitals, versus weekly reporting. The VMD module will interface with wireless devices (PC Tablets) on LAM's dedicated wireless network.

During 2004, *IEB conducted analyses and design activities on several applications to be included in the USU Corporate Database. Analysis and design tasks included conducting customer interviews, analyzing current business processes, creating data flow and screen flow diagrams, performing preliminary data analysis, and drafting specific system requirements.* Following the preliminary planning phase of development, the IEB continued software engineering activities with the following departments: Continuing Health Professional Education; the Military Training Network; Civilian Human Resources; Security; Military Personnel; and, the Audio Visual Center. Testing and implementation of these systems will be completed, during 2005.

Software Maintenance. During 2004, *the IEB responded to 1,318 trouble calls for maintenance, enhancement, and data requests associated with software applications developed, in 2004, and prior years.* The requests included service for the Student Tracking and Registration System (STARS II); Personnel Locator; Mailbox System; the Office of Graduate Education; AMCAS/AWS support (external data feed); Alumni Office application; Pharmacy application; and, the GSN application. IEB continued to staff a stable Development Team comprised of experienced software developers and a database administrator. Staff members hold degrees and Oracle and Microsoft professional certifications.

Web Development. *Web development projects, during 2004, included the availability of the new USU Web Site Search Engine. This feature provides the capability for USU web site visitors to easily locate information from any of the posted web pages, through the use of key words.* Additionally, the following new web sites were developed: Recruitment and Diversity; Laboratory Animal Medicine; Institutional Animal Care and Use Committee (IACUC); and, the USU Strategic Plan. *The Web Masters performed improvements to the USU Bulletin Board, which includes new administrative features for deletion, editing of messages, as well as, the ability to add administrative messages.* Other web development projects, during 2004, included an on-line survey for the USU Sports Medicine Group, which involved data collection, via the Internet, placing the data into an electronic format, and subsequently providing the data to the customer, in both converted and raw formats. The Web Masters continue to use a systematic methodology to perform web development activities. *During 2004, the LAM web based application was integrated into the USU Corporate Database.* In addition, the IEB continued to perform maintenance work on the Graduate Education on-line application. The web development projects were developed using Microsoft ASP, Visual Basic, PERL, and ran on a Microsoft IIS server in a Windows 2000 environment. To ensure data integrity and security from intrusions, all servers are routinely monitored and backed up.

New Technology (Wireless). During 2004, *UIS purchased equipment to support wireless technology at the University. The goal of the Wireless Project is to enhance teaching and learning with the use of wireless technology for USU students and to provide wireless network access for staff and visitors.* During the latter part of 2004, UIS began testing the wireless environment with much success; wireless access is now available in the Assembly and Student areas, supporting both research and teaching requirements. Benefits include access to e-mail, Internet, and research material. On-going efforts are being made to implement wireless devices in dedicated areas to be utilized with wireless applications.

Training. During 2004, *the UIS Training Officer provided classroom training for all SOM, GSN, MPH, and Graduate Students, as well as, personnel located at off-campus sites, such as Silver Spring, Maryland; the Walter Reed Army Medical Center; and, the National Naval Medical Center.* The Training Officer also provided training at the USU Faculty and Staff Orientation Sessions, which are held quarterly. At the user's request, the Training Officer performed specialized *hands-on* and *one-on-one* training for users on Microsoft applications, GroupWise E-Mail, the Proper Use of Network and Computer Resources, Network Security, and the newly developed ROOTDOMAIN, as well as, all supported UIS software and special requirements. The Training Officer provided annual and recurring security awareness training required for all faculty, staff, and students. In support of on-going strategic planning efforts, the Training Officer updated and electronically delivered the *UIS Quick Reference Guide* and the *UIS User Guide*, in 2004. And, the UIS Training Officer continued to develop training schedules and new topics for *Hands-On* training. Both *Guides* and the *Hands-On* training were developed in response to the University's strategic planning efforts to improve on- and off-campus communications.

System Operations (Network, Telecommunications, NetWare, and VAX). *In 2004, UIS System Operations supported 2,000 users in six remote locations. The Operations staff continued to produce significant gains in the stabilization of the network. Emphasis remained on server stability. Again, USU experienced a University WEB exposure of over 99 percent uninterrupted up-time.*

Network. During 2004, *the Network Branch processed 230 customer requests. Network personnel are responsible for the University's network design, implementation, maintenance, and configuration management. The Network staff continued to manage all local distribution systems with little, or no, down-time.* Project accomplishments, during 2004, included: additional infrastructure added to the commercial network connection; the implementation of a wireless network in designated areas of the University to support both research and teaching requirements; expansion of lab support in the Multiple Disciplinary Labs from 100 to 200 workstations with network capability; the consolidation of old Fiber Services circuits, which moved to fully supported *gigabit* services, at the remote Silver Spring site, in support of the Graduate School of Nursing, the Office of Continuing Health Professional Education, the Military Training Network, and Research Administration.

Telecommunications. During 2004, *the Telecommunications Branch processed 720 customer requests. The Telecommunications personnel provided support for: 2,236 voice and fax telephone lines; 1,400 voice mailboxes; and, video teleconferencing and satellite technical support for a wide variety of users.* Significant improvements were made in the reliability of communications and video conferencing services. New telephone lines and support equipment were installed in several newly acquired and/or renovated locations. Numerous telephone lines and support equipment had to be replaced, throughout the University, due to on-going renovations. Video Conference technology support was provided to the Departments of Medicine, Preventive Medicine and Biometrics, Medical and Clinical Psychology, and Obstetrics and Gynecology. Satellite programs were also downloaded for the Department of Preventive Medicine and Biometrics and the Armed Forces Radiobiology Research Institute. *During 2004, the Telecommunications Branch provided emergency telephone, cable, and special circuit support to on- and off-site locations that experienced service interruptions.* Projects, during 2004, included: up-grading the voice mail system with up-to-date software; replacing the FNS circuits with reliable fiber optic connections; relocating equipment for the University Health Center, Preventive Medicine and Biometrics laboratories, and other offices during an on-going renovation project; and, up-grading the voice mail system from 1,200 to 1,400 mailboxes, in conjunction with Verizon Communications and other vendors. Telecommunications personnel continued to receive professional training at local IT training sites.

Netware/GroupWise/Microsoft/Linux. In 2004, *the LAN Operations Branch processed more than 1,700 customer requests.* The Branch is responsible for: the Novell's File and Print Servers; six GroupWise E-Mail Servers; one in-bound Netware Gateway Sendmail Server; two in-bound and out-bound Linux Sendmail Servers; and, two Microsoft Domain Controllers. *The Netware Administrators provided maintenance support for the following: back-up of over 600 gigabytes of data; space allocations; on-line support of hardware failures; virus protection, testing and implementing vendor patches and upgrades; LAN account creation and deletion; reliable mail and file storage; and, the maintenance, creation, and attrition of over 2,500 Netware and E-Mail accounts and over 1,000 dial-in accounts.*

During 2004, *the LAN Operations Branch introduced the latest in back-up and restore procedures, with the installation of the new Netvault System.* The administrators can now schedule unattended back-up for all ten servers from one central location across a separate gigabyte network. Internal network servers

are now running a Microsoft SUS package, allowing UIS to push software security patches and common software updates to the user's desktop from a central location. Other 2004 project accomplishments included: integrating wireless technology into the USU environment; and, implementing a Root Domain Service with more than 50 percent of leased machine participation; the Branch has an expectation of 90 percent participation, in 2005.

Web Support. In 2004, the UIS Operations Division maintained and supported three web servers: Primary; Interim; and, Back-Up. ***The Primary web server hosted over 3,500 pages;*** the server runs under Linux. The Linux Administrator upgraded the operating system and created a procedure to watch the web server process for errors. ***The Interim web server supported 85 Page Masters, within the University;*** the server runs under Red Hat Linux, with Apache as the web engine. ***The administrator has patched security holes on this server, which has resulted in a 100 percent up-time status.*** In 2004, the USU Web Masters of the Information Engineering Branch continued to provide support to the University's Page Masters.

VAX During 2004, ***the VAX Administrator processed more than 78 customer requests. The VAX Administrator is responsible for system maintenance, hardware and software support for the VAX and ALPHA Computer Systems.*** Accomplishments, during 2004, include: the removal of old user accounts and data to back-up tapes, which allows for the consolidation of the remaining accounts and data on fewer disks; the continuing update of the system software to prevent system crashes; the further reduction of the overall costs of the hardware and software contracts, through the elimination of unnecessary equipment and software; the continuing defragmentation of the user disks to improve processing times; the moving of the VAX systems (3) behind the firewall to improve security; and, working with Resource Management Information personnel to reduce the number of print-outs, through electronic distribution.

Security. During 2004, ***the Information Systems Security Officer (ISSO), investigated more than 60 security incidents and virus attacks from NavCert, the National Naval Medical Center, the Fleet Information Warfare Center (FIWC), DoD, and the USU Security Office.*** In addition to investigating incidents, the ISSO reported subsequent findings to the requesting agency based on appropriate reporting procedures; and, the ISSO developed an internal process to centralize the tracking and reporting of incidents. In addition, the ISSO played a major role in eradicating computer viruses and identifying systems with security deficiencies. Other successful projects that the ISSO participated in, during 2004, included 1) ensuring that security configuration management tasks were performed on all systems, including leased machines, Henry M. Jackson computers, laptops and personal computers; 2) identifying new applications and technologies for virus protection in support of network defense; and, 3) applying HIPPA standards to personal computers for certification. The ISSO provided guidance to students, staff, and faculty on ROOTDOMAIN user accounts and local administrator accounts. And, the ISSO was also instrumental in providing guidance in support of the development and security of the USU EDU Wireless Network. Finally, the ISSO provided guidance to the Automated Information Systems Policy Committee (AISPC) on a wide range of security issues and policies.

Joint (USU and HJF) Technology Transfer Program.

Background. New Federal statutes, dating from the early 1980's, have encouraged Federal research laboratories and public academic institutions to transfer inventions and other technology to the public sector (industry, state and local governments, and other academic institutions). This *technology transfer* process helps to ensure that the benefits of public investment in research and development are shared with all segments of our society. The new statutes also permit Federal laboratories and public academic institutions to receive royalties and other income associated with technology transfer involving the commercial sector - providing funds for use in further research and for incentives to researchers and other personnel involved in research. Many academic institutions have partnered with supporting foundations to enhance their efforts in technology transfer.

Technology transfer mechanisms include cooperative research and development agreements (CRADAs), material transfer agreements (MTAs), and licensing agreements. Intellectual property rights in inventions are protected through the patenting process. Because of the legal issues associated with technology transfer mechanisms and the patenting process, the USU Office of the General Counsel is directly involved in both the oversight and operation of USU efforts in technology transfer. In 2000, USU and the Henry M. Jackson Foundation for the Advancement of Military Medicine (HJF) established a Joint (USU and HJF) Office of Technology Transfer (JOTT) and a Joint (USU and HJF) Patent and Technology Review Group (JPTRG). Operating jointly has enhanced interrelationships with the HJF-supported USU biomedical research program and facilitated both patent protection and commercialization of USU and HJF-developed technology.

Assisted by technical expertise from the United States Army's Intellectual Property Division (pre-2000) and the JOTT, ***USU has established itself as a leader in biomedical technology transfer and one of the most successful technology transfer income producers among all government agencies.*** This success has generated funding support for USU's research and education programs, as well as, significant monetary awards for individual researchers. The USU Technology Transfer Income Oversight Committee provides oversight for the allocation of technology transfer income, to include allocations to a limited number of endowment funds. University initiatives are also advanced through the use of collaborative research and development agreements, invention licenses, collaborations, and partnerships.

Current Activities. A significant indicator of the success of technology transfer, at USU, is the sharing of USU research in a manner that promotes progress in science and improvement in the quality of health care for the Uniformed Services, the Nation, and the world. ***In 2004, the University entered into seven new Cooperative Research and Development Agreements (CRADAs) and 63 new Material Transfer Agreements (MTAs); USU also filed 7 patent applications and 9 provisional patent applications.*** In addition, ten patents were issued for USU inventions and two new licenses were executed, for a total of ten active licenses. These licenses generated over \$6.7 million in income for allocation to USU research projects, educational programs, and endowments, as well as, for incentives for researchers and their laboratories. Separately, CRADA partners provided \$72,000 in support for research. Technology transfer has also played an important, direct role in strengthening USU research overall, with recognized success in Microbiology and Immunology; Pediatrics; and Anatomy, Physiology and Genetics.

RESOURCE STEWARDSHIP

STEWARDSHIP: We will protect and enhance the human and physical resources of the University, optimize productivity, promote a sense of family and community, while emphasizing flexibility in response to changing world conditions.

- Goal 5, STEWARDSHIP, USU Strategic Plan, 2003.

New Construction on the USU Campus.

Background. Since 1978, there has been no additive construction to support USU activities, despite the growth in the number of degree-granting programs conducted by the University and major increases in the cost-effective oversight responsibilities assigned to USU by the Office of the Assistant Secretary of Defense for Health Affairs (OASD/HA). Some of those expanded responsibilities include: the Graduate School of Nursing (GSN); administration of the TriService Graduate Medical Education (GME) Programs for the National Capital Consortium; mandated professional Continuing Health Education (CHE); the USU/DoD Center for Education and Research in Patient Safety; the USU SOM Departments of Medical and Clinical Psychology and Family Medicine's Center for Health Disparities Research and Education; and, essential credentialing programs for the MHS. In addition, *the accrediting entities for the University have continuously recommended that USU address the expanded academic program requirements for small classrooms; and, they have expressed serious concerns over the separation of the GSN faculty and students between two locations, which adversely impacts student instruction, mentorship, and counseling.* Between September 1993 and December 1997, USU was prohibited from participating in the military construction process. However, following the December 1997 decision of the Secretary of Defense that the University should remain open, as stated in Program Budget Decision 711, the USU Vice President for Administration and Management (VAM) was directed by the USU President to provide oversight for the resubmission of all documentation and related efforts required for the construction of a fifth building on the USU campus.

The Beginning of a Four-Year Process for an Approved Construction Project. On April 4, 1997, a Health Affairs site team determined that the construction of a fifth building at USU, in Fiscal Year 2001, would eliminate leasing costs and would be cost-effective. On March 26, 1998, Design Authorization 98-N-10 was provided to the Naval Facilities Engineering Command with the following directions: 1) the inclusion was to take place in Fiscal Year 2001; 2) the scope of construction was to include 8,312 gross square meters; 3) the design/construction amount, in 1997, was \$15,000,000; and, 4) DD Form 1391 and a Draft Program for Design were provided with the authorization. The Navy Facilities Engineering Command completed its call for contractor bids on the design requirements for the USU construction project and remained on hold until the USU construction was approved by Health Affairs. In May of 1998, Health Affairs determined that construction at USU would not be included in the Fiscal Year 1999 Defense Health Program (DHP) MILCON package; and, the Surgeons General would be required to identify funding from their Medical Construction Programs. *In June of 1998, the Senate Committee for the 1999 Military Construction Appropriation Bill urged "the Department of Defense to address the requirement for a fifth building construction project in the Fiscal Year 2000 budget."*

During 1999, *the Military Construction Appropriations Bill for Fiscal Year 2000 included the following: "The TRICARE Management Agency is directed to accelerate the design of this project (the*

construction of a fifth building on the USU campus) ***and to include the required construction funding in its fiscal year 2001 budget request.***” In response to the congressional directive, and, in its capacity as the Executive Agent for USU, on October 26, 1999, the Navy Bureau of Medicine (BUMED) Facilities Planning and Programming Division initiated the contracting process for a Project Planning Study. The USU Project Planning Study, to develop a quantifiable needs assessment for space, began on December 6, 1999; BUMED also established a TriService Study Team to review and validate the identified requirements; and, the USU President also established an *ad hoc* committee to assist the VAM. The first phase of the study was provided in draft form to the TRICARE Management Agency, in January of 2000; the VAM organized inclusive background notebooks, which provided documentation, projected space requirements, and mission-related information covering the program requirements for the nine USU requirements that were included in the Project Planning Study: (1) the unification of the *GSN* faculty and students at the USU campus; (2-6) the cost-effective relocation of essential personnel to the USU campus (*GME*, to include the Administrative Office for the National Capital Consortium, *CHE*, the Military Training Network (*MTN*), Preventive Medicine and Biometrics (*PMB*), and the *TriService Nursing* Research Program Liaison Office); (7) address a severe shortage of ***classrooms and lecture halls***; and, (8-9) provide housing for both the ***USU Office of Educational Affairs*** (to include USU readiness and simulation requirements) and critical requirements of the Office of the USU President, to include the ***USU Chaplain***.

BUMED Study Validates the Proposed Construction. The BUMED Study Team focused on two primary areas of concern: 1) the functional shortfall of current and projected requirements for small, multi-functional, and multi-configuration capable classrooms; and, 2) the cost-effective relocation of USU activities from leased space to the USU campus. The BUMED Study Team coordinated a justification/validation process with the Services for the requested space. Following the validation process, a memorandum was completed by BUMED and forwarded by the Navy Surgeon General on February 17, 2000, to the Chair of the USU Executive Committee; the memorandum recommended that the Surgeons General pursue a joint decision to program funding for the proposed construction of Building E on the USU campus. On April 12, 2000, USU was informed by BUMED that a consensus had been reached among the Surgeons General on the following factors, which represented the position of the USU Executive Committee: 1) the project represents validated space requirements and is needed; 2) the current estimated project cost (\$9 million) is appropriate; and, 3) the project should be programmed by TMA (TRICARE Management Activity) utilizing standard MILCON processing milestones (i.e., Fiscal Year 2005 or later). ***On September 25, 2001, USU was notified by BUMED that its construction project had been included in the TRISERVICE Medical MILCON Program for Fiscal Year 2006 at a total cost of \$9,300,000 (the total was increased to \$9,600,000, by TMA, in January of 2003; then, it was increased once more to the current total of \$10,350,000, following the S-4 Design Meeting held with TMA on July 20, 2004).***

Scope of the Construction Project. The total scope of the proposed construction project is 55,220 gross square feet, which includes underground parking. The Program for Design distributes 39,969 gross square feet to meet the University’s requirements for ample circulation associated with the movement of students and staff between classrooms (*the underground parking garage includes a total of 14,890 gross square feet; the connector with Building A has 361 gross square feet*). The 39,969 gross square feet will be constructed with a fibre-optic backbone throughout the occupied portions of the building and connected to the existing USU IT network. Breakout of the 39,969 gross square feet approximately reflects as follows: *Education Offices/Administrative Support* - 52 percent; *Classroom/Classroom Support Space* - 29 percent (includes support and storage areas); *General Support* (Toilets/Lockers, etc.) - 11 percent; *Distance Education Production Laboratory (Studio)* - 6 percent; and, a *Computer Learning/Testing Area* (20 Stations) - 2 percent.

All Required Studies for the USU MILCON Project Are Completed. The coordination process for the proposed USU construction project was developed using the Defense Medical Facilities Office, Office of the Assistant Secretary of Defense for Health Affairs, Space and Equipment Planning Systems (SEPS). The Bureau of Medicine, the Engineering Field Activity Chesapeake, the Naval Facilities Engineering Command, and the TRICARE Management Activity, Health Affairs, directly coordinated in the development of the construction project. All studies/analyses were completed and provided in a Project Notebook, dated October 2000. The *Environmental Assessment Study*, initiated in October of 2000, was coordinated and completed; in mid-November of 2001, USU was informed that the proposed construction would not adversely impact the environment; and, an Environmental Impact Statement would not be warranted. A request to the Chief of Naval Operations (CNO) for a formal determination was submitted; *the CNO's written response, documenting no significant impact/approval of the environmental assessment findings, was dated September 17, 2002.*

TMA Approves Design Authorization for the USU Academic Program Center Project. *The Military Construction Appropriations Bill for Fiscal Year 2003 included \$1,300,000 for the accelerated design of the USU Academic Program Center.* During December of 2002, BUMED requested that the VAM provide/present a briefing/point paper on the University and a tour of USU for staff from the TRICARE Management Activity (TMA), which was accomplished. Next, the VAM provided an overview of current collaborative activities between USU and the Department of Veterans Affairs (VA). *On January 8, 2003, USU was provided with documentation from TMA authorizing the design of the USU Academic Program Center Project at \$9,600,000 and the approved Program for Design (as indicated above, following the S-4 Design Meeting, the project was increased to a total of \$10,350,000 by TMA).*

Ewing Cole Cherry Brott, Architectural and Engineering (A&E) Firm, Selected by the NAVFAC Medical Facility Design Office. The A&E firm selected by the Engineering Field Activity Chesapeake Naval Facilities Engineering Command was *Ewing Cole Cherry Brott*. On March 17, 2003, representatives from BUMED, the NAVFAC Medical Facilities Design Office (EFA Chesapeake), and the A&E firm met at USU for a preliminary meeting pending the awarding of the contract for design. The USU President, the VAM, and the Facilities Division represented the University.

S-1 Design Meeting - May 21-22, 2003. Following the awarding of the design contract, on May 21-22, 2003, a pre-design (S-1) meeting was hosted at the Washington Naval Yard by EFA Chesapeake. Most of the meeting was spent determining which activities would be placed on the Ground, First, and Second floors of the new building. The University was asked to respond to several action items following that conference; all information was provided to EFA Chesapeake by June 10, 2003. A field investigation took place, which included a site visit to USU to conduct soil borings and measure the surface of the project site area.

S-2 and S-3 Design Meetings. The second design meeting (S-2) with the A&E took place on September 16-17, 2003, at the USU campus. The purpose of the S-2 was to: conduct a review of the S-2 design submittal; identify and resolve all major space program assignments and deficiencies at an early stage in design; develop the massing and aesthetics of the facility; and, establish the scope of the building. Unresolved comments/concerns from the S-2 meeting were incorporated into the S-3 submittal. The S-3 Design Meeting was held on March 1-2, 2004; most concerns were resolved either before, or during, the meeting.

Agreements During the S-2 and S-3 Meetings.

1) *Connecting Corridor:* The new building would have a Ground Floor connection with Building A. The connecting corridor would be enclosed; no HVAC requirements would be addressed in the corridor.

2) *Ground Floor - Classrooms:* The construction would include one large 100 person classroom and smaller flexible classrooms. Moveable partitions were planned for subdividing each pair of small classrooms. USU noted the Distance Education Laboratory might provide some flexibility to increase the space for the large classroom. (*NOTE: The USU distance learning concept changed from video-based to Internet-based, resulting in a reduction of the area/space required.*) The large classroom would include fixed seating along 18” deep tables and a rear exit in the design. All present approved the Ewing Cole (EC) sketch of the revised classroom configuration and related storage areas. BUMED processed USU’s written justification requesting a modification to the Program for Design to reflect the reconfigured sizes for the classrooms.

3) *GSN Plaza-First Floor:* The Plaza/First Floor would be designated as the Graduate School of Nursing (GSN) Floor. USU designated that additional open-office work stations should be provided *in lieu of* enclosed offices in the administrative areas. The two co-located departmental conference rooms, belonging to the GSN and OUA, would share a movable wall for expandability into one large conference room.

4) *Building Core Areas and Office Door Locations:* The S-2 locations for stairs, elevator, mechanical, electrical, toilet, and communication rooms were approved. USU requested staggering the doors across corridors to provide offices with additional privacy when the doors are open.

5) *Second Floor:* A conceptual plan was developed that re-arranged the departmental organizations and created more open office systems work stations on the second floor. The two co-located departmental conference rooms (CHE/GME) would share a movable wall for expandability into one large conference room.

6) *Virtual Walk-Through:* A computer-generated interior model walk-through was presented during the S-3 meeting. Renderings were reviewed and selected for the exterior design.

7) *Audio Visual and Communications Equipment:* Ewing Cole coordinated with USU, through EFA Chesapeake, to develop the audio visual and communications requirements. *Wireless* versus *Wired* data/computer systems were coordinated by BUMED and agreed upon during the S-3 Design Meeting.

8) *Partitions and Systems Furniture:* BUMED coordinated systems furniture and acquisition requirements with USU (the USU Logistics Division met with the future occupants to work out office and furniture requirements, which were provided to BUMED for incorporation). Modular or demountable partitions (walls) were not approved. Low height systems furniture partitions could be incorporated.

9) *Issue Papers on Required Funding:* On December 19, 2003, the VAM submitted an issue paper on the funding required for facility maintenance, custodial services, utilities, relocation costs, communications, and outfitting for Building E, as some, or all, of these requirements must be funded in the out-years following construction (*the USU Vice President for Resource Management utilized this information in the DoD Budgeting Process, during Fiscal Year 2004, to request funding for the initial out-fitting and one-time and recurring beneficial occupancy costs projected for Fiscal Years 2006-2011*).

The USU Logistics and ASD Divisions also provided the estimated costs of furniture/copier equipment in Building E (to include whatever may be reutilized from the existing leased space); that report was submitted, by the VAM, to the USU Vice President for Resource Management on January 15, 2004; this information was also included in the USU/DoD Budgeting Process. Similar information for the project was provided, by the VAM, to BUMED on February 17, 2004, as part of the design process.

Agreements Following the S-3 Meeting.

1) *AntiTerrorism Force Protection (ATFP) Design Features:* BUMED received approval to restrict access to Stone Lake Road at both ends of the construction site, which would reduce, but not eliminate, the level of ATFP design and construction features required for the project. Road details, such as Bollards and emergency-only access, were designed; final requirements and cost estimates were coordinated/completed by the USU Security Office and BUMED.

S-4 Design Meeting. The required information for the S-4 Design Meeting was submitted by the A&E to EFA Chesapeake, on July 1, 2004; on July 20, 2004, NAVFAC (EFA/EFD) presented the S-4 package to DMFO (Mr. Sharma/TMA). During that meeting, BUMED and EFA Chesapeake worked out a proposal to add \$750,000 to the USU Project (*increasing the USU construction project from \$9,600,000 to \$10,350,000; the TMA confirmation memorandum is dated August 4, 2004*).

On September 16, 2004, a meeting was held, between BUMED and the Office of Management and Budget, on the Fiscal Year 2006 MILCON. During that meeting, questions arose over the inclusion of the USU project in the Fiscal Year 2006 MILCON. Between October 1 - 6, 2004, BUMED and the VAM prepared information packages addressing the questions raised, during the September 16, 2004 Meeting; all concerns were addressed and resolved. (*Program Budget Decision (PBD-753) issued by OSD on December 23, 2004, did not eliminate the USU MILCON Project; and, so the design process was continued.*)

S-5 Design Meeting. The S-5 Design Meeting (*65 percent submittal*) was held on December 8-9, 2004, at EFA Chesapeake. The S-5 Design Meeting consisted of a review of all technical comments. USU submitted comments on the S-5 package, to include a concern that the connecting corridor, between Building A and the proposed Building E, was not shown as being enclosed. USU was subsequently informed by BUMED that the connecting corridor would continue to be shown without enclosure, due to funding limitations; however, since the connector was not included within the scope of the project, the *Facilities Construction Manual 11010.10F* would allow the University to fund this as a separate project, should end-of-year funding become available.

S-6 Design Meeting. The S-6 Design Meeting (*100 percent submittal*) was originally scheduled to be held on June 13-15, 2005; USU submitted 22 pages of comments in preparation for the meeting. On June 14, 2005, USU was notified that the NAVFAC review team had conducted an interim mechanical submission review, after the S-5 submission, to correct the mechanical design deficiencies; it was determined that the deficiencies were not corrected, so a new date was set for the S-6 Design Meeting. The S-6 Design Meeting took place on July 20-21, 2005.

S-7 Final Design Reviews. The S-7 Design Review of all drawings/specifications was initiated on August 17, 2005; USU completed its response on August 31, 2005; all participants have completed their final reviews. On September 27, 2005, the USU President and his direct reports were briefed, at USU, by the A&E and EFA Chesapeake, who provided the following details: **1)** the Construction Award process has been initiated; **2)** the contract award is expected to take place by May of 2006; **3)** the construction process is projected to take 14 months; and, **4) July of 2007 is the projected month for the completion of the Building E construction project.**

Navy Base Allocation of Space to USU. Between 1999 and 2002, as directed by the USU President, the Vice President for Administration and Management (VAM) and the USU Facilities Division led the coordination process with the National Naval Medical Center (NNMC) for the reallocation of space that had been occupied by the Naval Medical Research Command (NMRC); NMRC's relocation process began, during 1999, and was completed, in July of 2001.

The USU President and appropriate leadership were kept totally informed; the VAM coordinated closely with the Vice President for Resource Management during the following process: 1) confirmation of adequate funding to support the acquisition of new space (*the Facilities Division coordinated cost estimates for information systems requirements; communication systems; office furniture and equipment; minor construction; and, maintenance, to include utilities and janitorial services*); and, 2) a successful coordination process with NNMC, to include the completion of a separate Memorandum of Understanding for each of the five buildings (*USU was allocated responsibility for Buildings 59, 28, 79, 53, and 139; Building 59 was made totally available to USU, during 1999; Buildings 28 and 79 were turned over to the University, during 2000; Building 53 was assumed by USU in July of 2001; and, Building 139 was allocated to USU, during 2002*).

Building 53. Building 53 is a two-story structure with an additional mid-level basement that houses the building and hyperbaric mechanical support systems. The allocation of Building 53, which includes approximately 32,285 gross square feet, addresses USU's urgent requirements for laboratory, administrative, and storage space; these requirements will **not** be addressed by the proposed construction of a fifth building on the USU campus. Building 53 includes 12 large laboratories and several thousand usable square feet of administrative space. At the request of the USU President, the Dean of the SOM directed his space committee to make recommendations, through him, to the USU President for the allocation of space on the second floor of Building 53. That process was completed by December of 2002.

Building 59. Building 59, a two-story structure, has 4,072 gross square feet, which include an immersion pool/tank, a physiology lab, an instrumentation lab, and divers' lockers. Following minor renovations, completed during 1999, investigators from the Department of Military and Emergency Medicine moved into Building 59.

Building 79. Building 79, adjacent to Building 59, is a two-story structure with an unfinished second floor; it offers approximately 1,400 gross square feet on the first level. In September of 2003, funding was obligated for the initial design and renovation of the building; that initial phase was completed by mid-2005.

Building 28. Building 28 is a two-story structure with a total of 5,155 gross square feet. Renovation of the second floor was completed and by mid-2002, it was used by two USU activities: the Graduate School of Nursing (1,206 useable square feet) and the SOM Department of Medical and Clinical Psychology (1,127 useable square feet). The renovation of approximately 1,619 square feet of space on the first floor was completed in June of 2004; it houses the USU/DoD Center for Education and Research in Patient Safety (821 useable square feet) and the USU Center for Health Disparities Research and Education (798 useable square feet).

Building 139. Building 139 is a one-story structure with approximately 5,562 square feet, which was made available for the USU SOM Department of Surgery and the USUHS/Windber Medical Center/Walter Reed Army Medical Center/Department of Navy Clinical Breast Care Project, during 2002. This research project utilizes a multidisciplinary approach as the standard of care for treating breast diseases and breast cancer. The multidisciplinary model integrates prevention, screening, diagnosis, treatment, and continuing care; the project is further unique in the proposed incorporation of advances in risk reduction, informatics, tissue banking, and research. The Clinical Breast Care Project paid for all required renovations; it also paid all costs associated with the building to include utility, maintenance, and custodial requirements, during 2004.

Allocation of 18,298 Square Feet of Useable Space.

Building 53 - By December of 2002, four USU School of Medicine (SOM) Departments: Clinical Pharmacology; Psychiatry; Radiology and Radiological Sciences; and, Neurology occupied **11,969 useable square feet**. The Graduate School of Nursing (GSN) was allocated **635 useable square feet**; and, the Multi-Disciplinary Laboratories (MDL) was provided with **676 useable square feet** for a USU conference room. Thus, the SOM, GSN, and MDL occupy a total of 13,280 useable square feet in Building 53.

Building 59 - This building is occupied by the SOM Department of Military and Emergency Medicine with **1,066 useable square feet**.

Building 28 (First Floor) - A portion of the first floor in Building 28, **1,206 square feet of useable space**, is occupied by the Graduate School of Nursing; the SOM Department of Medical and Clinical Psychology also occupies **1,127 square feet of useable space** on the first floor; **(Ground Floor) -** The USU/DoD Center for Education and Research in Patient Safety occupies **821 useable square feet** on the ground floor of Building 28; and, the USU Center for Health Disparities Research and Education occupies **798 useable square feet** on the ground floor of Building 28.

Summary - In accordance with the USU Strategic Plan, which calls for the acquisition of additional laboratory and administrative space for the University programs, **by December of 2002, a total of 18,298 additional square feet of useable space had been provided to the USU community (the SOM occupies 14,162 square feet of useable space; the GSN occupies 1,841 square feet of useable space; the MDL manages a USU conference room with 676 square feet of useable space; and, two University Centers occupied 1,619 square feet of useable space).**

Renovation of the Newly Allocated Buildings. Due to the condition of the newly acquired buildings, renovation efforts have been on-going. For example, in September of 2002, with the approval of the USU President, the VAM successfully coordinated with Resource Management and the Naval Facilities Engineering Command (NAVFAC) to complete the required documentation for the obligation of funding to renovate the lower level of Building 28. It was decided by the USU President that the renovated space would be allocated for the USU/OSD Patient Safety Program (821 useable square feet) and the USU Center for Health Disparities Research and Education (798 useable square feet); the renovation project, in Building 28, was completed in June of 2004. New roofs were installed on Buildings 28, 53, and 59, during 2003. Significantly, resources were funded, at the end of 2003, for the renovation of the air handling units in Building 53, which was completed in July of 2004. Requests for future renovation requirements and upgrades, in these newly acquired buildings, are continuously being planned and incorporated into the USU Facilities Division Project Listing, in anticipation of available end-of-year resources.

USU Facilities Division Project Listing Serves as the Strategic Plan for Construction and Renovation Requirements at the University.

Background. For eight years, the USU Facilities Division, under the direction of the USU Vice President for Administration and Management (VAM), has successfully coordinated with the Naval Facilities Engineering Command (NAVFAC) to streamline and maximize the process for obligating funding for urgently required renovation projects throughout the University's infrastructure, during, and at the end of, each Fiscal Year. Such a process requires extensive documentation and must comply with DoD regulations for the acceptance of funding by NAVFAC or the USU Contracting Office.

An On-Going Process. During each Fiscal Year, the USU Facilities Division and the USU Director of Logistics meet weekly with NAVFAC personnel and the VAM to: 1) ensure open communication; 2) resolve on-going concerns and issues during the implementation of previously funded projects; and, 3) ensure the preparation of documentation for future projects and the on-going obligation of funding as it is identified by the USU Vice President for Resource Management. The Project Listing is regularly updated and provided by the USU Facilities Division to all participants at both NAVFAC and USU to ensure that this demanding process is both open and accurate, to include the required monitoring of on-going projects, and the maintenance of complete and accurate status information.

The Facilities Division Project Listing currently includes the following information: *1) the status of unfunded projects for the current Fiscal Year, to include design and construction costs; as of June 17, 2005, there were 68 active projects in this section of the Project Listing (43 facilities related projects and 25 laboratories identified for renovation); 2) totals and status of completed documentation submitted by the USU Facilities Division to the USU Office of Resource Management for projects recommended for funding in the current Fiscal Year (2005); 3) totals and current status of projects already funded during the current Fiscal Year (2005); as of June 17, 2005, \$210,917 had been funded during Fiscal Year 2005; and, 4) the current status of all previously funded projects during past Fiscal Years, as of June 17, 2005, reflect as follows:*

- **Fiscal Year 2002:** During Fiscal Year 2002, a total of \$10,051,460 was obligated by USU with NAVFAC, with *completed projects* at a total of \$7,883,905;

- **Fiscal Year 2003:** A total of \$12,444,967 was obligated, with *completed projects* totalling \$5,839,521; and,

- **Fiscal Year 2004:** A total of \$7,497,848 was obligated, with *completed projects* at a total of \$4,490,110.

This process is both time consuming and complex; however, it has been found to be most acceptable by both NAVFAC and USU management. The USU Facilities Division Project Listing serves as the ***Strategic Plan for the Construction and Renovation Requirements*** for the entire USU complex. As projects are completed, new requirements are constantly being identified by the NAVFAC engineers and the USU Facilities Division; once recognized, they are entered into the Project Listing and begin the documentation and funding process. As a result, the USU campus (*to include Buildings 28, 53, 59, 79, and 139*) is well maintained and reflects excellent stewardship on the part of the leadership of the University. Without the Facilities Division's time-proven process, the University would not be in a position to accept funding from Health Affairs, or other sources, during, or at the end of, each Fiscal Year. During the past four years, the support from the USU Vice President for Resource Management (RM) has been on-going. The VAM and Facilities Division spend many hours coordinating with RM to ensure that the infrastructure of the USU campus is well maintained, through the obligation of funding with NAVFAC. The on-going selection, design, and renovation of research laboratories has also been streamlined through the decision-making process established by the Dean of the School of Medicine on July 2, 2002; the laboratory renovation process is coordinated with the USU Vice Presidents for Research and Resource Management.

43,578 Square Feet of Laboratory Renovations Have Been Completed Throughout Buildings A, B, C, and D. During 2000, with the approval of the USU President, and the identification of funding by the Vice President for Resource Management, the VAM and the USU Facilities Division provided oversight for the renovation of 2,310 square feet of laboratory space throughout the USU complex. Laboratory renovation was completed and coordinated through the Dean, SOM, for four Departments: Biochemistry; Obstetrics and Gynecology; Radiology and Radiological Sciences; and, Anatomy, Physiology and Genetics. During 2001, one laboratory with 468 square feet was renovated within the Department of Biochemistry. With the 33,127 square feet of renovated laboratory space that took place from 1993 through 2000, combined with the 468 square feet of renovation, during 2001, the total of renovated laboratory space was approximately 33,595 square feet, or 38.6 percent of the 86,926 square feet of laboratory space in the USU complex.

During 2003, funding was identified for laboratory renovations through collaborative efforts by the VAM and the USU Facilities Division with the Dean of the School of Medicine and the Vice Presidents for Resource Management and Research. In 2003, 1,862 square feet of laboratory space was renovated for three SOM Departments: Obstetrics and Gynecology (two laboratories - 460 square feet); Microbiology and Immunology (two laboratories - 690 square feet); and, Anatomy, Physiology, and Genetics (two laboratories - 712 square feet). Combining the total of 33,595 previously renovated square feet with the 1,862 square feet renovated during 2003, totals 35,457 square feet; or, 40.8 percent of the 86,926 total square feet of laboratory space at USU.

During 2004, \$2,301,879 was funded for laboratory renovations through collaborative efforts by the VAM and the USU Facilities Division with the Dean of the School of Medicine and the Vice Presidents for Resource Management and Research. In 2004, 8,121 square feet of laboratory space was renovated for nine SOM Departments: Pharmacology (four laboratories - 1,424 square feet); Pathology (two laboratories - 690 square feet); Anatomy, Physiology and Genetics (two laboratories - 690 square feet); Neurology (four laboratories - 842 square feet); Microbiology and Immunology (one laboratory - 460 square feet); Psychiatry (one laboratory - 460 square feet); Preventive Medicine and Biometrics (two laboratories - 1,755 square feet); Medicine (one laboratory - 900 square feet); and, Obstetrics and Gynecology (one laboratory - 900 square feet). ***Combining the total of 35,457 previously renovated square feet with the 8,121 square feet renovated during 2004, totals 43,578 square feet; or, 50.1 percent of the 86,926 square feet of laboratory space in Buildings A, B, C, and D.***

Renovations in Building 53. Throughout 2000 - 2003, with the approval of the USU President, and the identification of funding for projects by the Vice President for Resource Management, *the USU Facilities Division provided oversight for contracted work, support, and manpower from its Division staff for the renovation of a total of 7,899 square feet of laboratory and administrative space in Building 53.* The SOM Departments of Medicine (Clinical Pharmacology - 2,630 square feet), Psychiatry (1,932 square feet), and Radiology and Radiological Sciences (2,026 square feet) represented a total of 6,588 square feet of renovated space for the SOM; the Graduate School of Nursing had 635 square feet renovated for mentoring and educational use; and, the MDL Division of Teaching and Research Support had a conference room with 676 square feet renovated for use by the entire USU community. All of the extensive relocation, equipment and furniture requirements required by the USU personnel assigned to these renovated spaces were coordinated by the USU Logistics and Administrative Support Divisions. During 2003, \$331,747 was funded for replacing the air handler units; and, \$227,106 was funded for installing natural gas capabilities, in Building 53.

During 2004, the air handler units were replaced and natural gas installed, via funding identified at the end of Fiscal Year 2003. The following requirements were funded during 2004: 1) installation of a glasswasher unit - \$32,359; 2) upgrade to the control panel on the Nash Laboratory Vacuum pump - \$33,865; repair of the emergency feeders - \$63,721; designation of handicapped parking spaces - \$6,500; and, the replacement of the water pump for the building generator - \$13,404. Also during 2004, 1,032 square feet of laboratory space was renovated for two SOM Departments: Family Medicine (361 square feet) and Psychiatry (671 square feet).

Heating/Ventilation/Air Conditioning (HVAC) Replacement Project. Following the identification of environmental and health concerns reference the necessary air exchanges required throughout the USU complex and the inability to procure replacement parts for the antiquated USU HVAC systems in Buildings B, C, and D, the VAM and the Facilities Division, with the approval of the USU President, coordinated with NAVFAC to design a complete replacement of the USU HVAC system. Building B was selected as the first area for renovation because it had the poorest air exchange in its laboratories. Phases 1 through 7 were completed. Phases 1-7 (\$8,900,000) included the construction of a mechanical room and the replacement of the HVAC system throughout Building B; this project began during 1999 and was completed in October of 2001. Phases 8 (\$2,456,260) and 9 (\$2,403,680) included Building C; they were completed at the end of 2002. Phase 10 (\$4,200,383) included Building D and was completed, in 2004. This expansive HVAC renovation project, including approximately 330,000 square feet, required the continuous relocation of various USU personnel; both the USU Logistics and Facilities Divisions dedicated extensive time and

support to minimize disruption to the USU mission. *(Since Building A includes a different HVAC system than Buildings B, C, and D and replacement parts are available for its HVAC system, air-handlers and duct work in Building A will be renovated as appropriate, in future years.)*

Anatomical Teaching Laboratory Renovation Efforts. During 1998, it was identified that the backroom/storage areas containing the freezers and work space for the Anatomical Curator required significant renovation. Late in Fiscal Year 2001, the VAM requested a review of the project and began coordination with the USU Vice Presidents for Resource Management and Teaching and Research Support for the renovation of both the work areas and the freezers. With the approval of the USU President, and the identification of funding by the Vice President for Resource Management, the Facilities Division coordinated with NAVFAC for an accelerated design for construction. That effort concluded successfully and \$201,254 was obligated for the construction requirements, during September of 2001. Resource Management, through the USU Contracting Directorate, also obligated funding for the purchase of new freezers. The project was successfully completed, during March of 2002. During 2003, funding was made available to replace the air handler unit #1 (\$1,751,532), which is critical to the Anatomical Teaching Laboratory. Planning and design took place throughout 2004; and, the installation of the new air handler unit was completed, as scheduled, during 2005.

Plaza and Elevator Repair. When the University was originally constructed, a drainage system had not been provided under the plaza. As a result, there had been a steady leakage of water throughout the underground garages and various areas at the ground floor level. Separate attempts had been made to correct this concern over the years; however, none resolved the problem. During 2000, the Facilities Division worked with NAVFAC to design a repair project for the plaza, which included four phases. The first two phases were funded during 2000 and completed. Resources in the amount of \$654,112 were funded in September of 2001 for the final two phases. Work was completed, during 2002, and the contractors also finished some minor related projects to include the replacement of concrete.

Funding was obligated for the repair/renovation of the elevators in Building A (three elevators), Building B (four elevators), and Buildings C and D (four elevators). Determination of the order of renovation for the 11 elevators throughout Buildings A, B, C, and D was based on the number of repair calls and general deterioration of the individual elevators. The renovation of the 11 elevators took place, one at a time, to reduce the level of inconvenience to the USU community; estimated construction time per elevator was four months. Construction of the Building A elevators began, in August of 2001, and was completed during December of 2002. Construction of the Building B elevators began, in October of 2002, and was completed in late 2003. Construction of the Building C and D elevators began, in November of 2003, and was completed, in April of 2004.

USU Campus Meets National Naval Medical Center Fire Regulations.

Background. Following the events of September 11, 2001, regulations for the enforcement of fire codes have been revitalized throughout the Federal Government. Within minutes of the terrorist attack at the Pentagon, occupants found themselves struggling to breathe due to heavy smoke, while they crawled along office floors and hallways to escape the resulting fires. This experience has reinforced the absolute necessity of providing written instructions, training, detailed evacuation routes, and unrestricted escape routes (hallways) for all personnel. Due to the shortage of office and storage space, throughout the USU campus, complying with the mandatory fire regulations has proven to be an on-going, difficult, yet successful process. On August 14, 2002, the USU received a memorandum from the National Naval Medical Center (NNMC) Fire Chief that identified specific areas of concern and fire code deficiencies. The USU Vice President for Administration and Management (VAM) coordinated a memorandum that was distributed to all USU personnel, on September 12, 2002. That memorandum addressed two major areas of concern: 1) occupant instruction and training regarding fire safety; and, 2) the clearing of all USU hallways in Buildings A, B, C, D, 53, 59, and 28. The USU Facilities, Logistics, Administrative Support, and Security Divisions worked directly with the SOM department chairs and administrative officers to meet the NNMC fire and safety regulations.

Actions Completed to Bring the University into Compliance with Fire Regulations. The first action concerned the USU Instruction providing the *Occupant Emergency Plan* for the University; it was updated and re-issued on October 25, 2002. Copies were provided to all activity heads and chairs and the instruction was also made available on the USU Web Site. A process has been implemented so that all current and new employees are made aware of the Occupant Emergency Plan. Next, *Emergency Evacuation Personnel Listings* of those USU personnel designated with specific responsibilities during an evacuation such as hallway monitors, assistants for the handicapped, etc., were updated and issued to all activity heads and chairs. The Director of the USU Security Division met with all personnel included on the listings to ensure that they were fully prepared to carry out their responsibilities. The USU Security and Facilities Divisions also *identified and verified all evacuation routes and posted evacuation signs throughout the USU campus*; this information is also posted on the USU Web Site. Following an emergency evacuation drill coordinated with the NNMC Fire Chief, on November 8, 2002, the VAM issued a briefing paper to the USU community on November 19, 2002, on *emergency evacuation procedures*. The focus of the briefing paper was on the critical requirement for compliance and specific directions on what actions should be taken during an emergency evacuation. All activity heads and department chairs are responsible for ensuring that all of their personnel know the evacuation routes and procedures to be followed during an emergency evacuation. Two training sessions were coordinated by the USU Security Division, during January of 2003.

The most difficult requirement for compliance included *the clearing of all hallways, throughout the USU campus*. All hallways had to be cleared except for the following items: already existing duplicating equipment and one filing cabinet per principal investigator/course instructor. Nothing can be placed on top of the filing cabinets; no storage cabinets may be placed in the hallways. Approved items must be placed on only one side of the hallways, to include the carts and trash cans that are placed inside the laboratories at the end of each working day. The VAM and the Facilities, Logistics, Administrative Support, and Security Divisions established a schedule for meeting the NNMC Fire Regulations and conducted inspections throughout the entire campus. *Since the process began, during late 2002, and was successfully completed, in March of 2003, over 200 filing cabinets have been removed from the USU campus*. This is an incredible accomplishment on the part of the USU community. It was a time-consuming and difficult process, which included an extensive review and disposition of files, equipment, and supplies by the activity heads, chairs,

and their administrative officers. In support of this effort, over 100 file boxes have been stored in the record management holding area of the Administrative Division; and, additional storage areas were constructed, in coordination with the NNMC Fire Chief, on the second-floor walk-way between Buildings B and C. Those storage areas were distributed in a manner to ensure compliance with the NNMC Fire Regulations.

During late 2004, *the NNMC Fire Chief informed USU that both sides of the hallways must be totally cleared.* Since that time, the ASD, Facilities, and Logistics Divisions have increased efforts to assist the Departments and Activities in the further reduction of their filing cabinets and office equipment. The VAM and the Facilities, Logistics, Administrative Support and Security Divisions continuously inspected the hallways of the entire campus, during 2004.

Resource Management Programs.

Background. The areas of responsibility described below are under the oversight of the USU Vice President for Resource Management. **Mr. John E. Dexter** was selected as the first USU Vice President for Resource Management, in June of 1990; he served in that capacity until November 19, 2000. Following an extensive search, the second USU Vice President for Resource Management, **Mr. Stephen C. Rice**, was selected and assumed the position, on November 20, 2000.

Financial & Manpower Management. The University's Financial & Manpower Management (FMG) Directorate successfully closed out the Fiscal Year 2004 Operation and Maintenance account (one-year money) with an obligation rate of 99.995 percent. During 2004, the University was able to make further progress towards resolving USU's equipment backlog, funding over \$1,200,000 in educational, administrative, and clinical research equipment.

During Fiscal Year 2004, the University set an outstanding record with only one travel cardholder delinquency becoming 60 days past due. Considering that the University has approximately 1,000 cardholders, and every month at least 300 individuals travel spending an average of \$175,000 in charges, this record of payment has set the standard for all Defense Agencies. Once again, the level of support from the President, Deans, and Vice Presidents ensured the continued success of this highly visible program.

The University's bill for accounting support from the Defense Finance and Accounting Service (DFAS) increased by less than one percent in Fiscal Year 2004, to \$458,000, despite the fact that, in the past year, DFAS imposed rate increases ranging from 16 to 29 percent across its various categories of support. This extraordinary achievement is a continuing result of the Accounting Systems & Policy (ASP) Division's oversight and provision of support to DFAS in the preparation of University accounting reports. One major development was ASP's automation of the trial balance report; ASP and Resource Management Information (RMI) collaborated on converting the College and University Financial System (CUFS) trial balance into standard United States General Ledger format. Overall, FMG was able to reduce direct billable hours from 3,314 hours to 2,016 hours, a savings of 1,298 hours with a resulting cost avoidance totaling \$105,500.

FMG is actively participating in the University's effort to find a modern replacement accounting system for CUFS that is compliant with Federal and DoD requirements. FMG has worked closely with DFAS and the TRICARE Management Activity (TMA) to help implement the daily transfer of detailed accounting data into the DFAS Corporate Database (DCD) from CUFS. This is an ongoing effort and resources are continuing to be expended in its development.

Two important financial management initiatives were continued, during Fiscal Year 2004. First, Resource Management staff continues to add vigor to the mid-year review process, meeting individually with each Department Chair, Vice President, and Activity Head, resulting in an emphasis on shared problem solving for budgetary issues. Second, there is an increased level of detail and justification required in the University's budget submissions, which leads to a clearer articulation of priorities and the better use of resources.

Resource Management Information Office. The Resource Management Information Office (RMI) is comprised of the Systems Administration and Information Systems & Services Branches. The RMI develops, maintains, and administers the University resource management information systems for over 500 users located at USU and AFRRI. These systems consist of the College and University Financial System (CUFS), DoD's Standard Procurement System (SPS), web publication of financial reports, and the Office of Research Administration (REA) Grants Management System, *Coeus*.

In 2004, RMI was an essential participant in several program development and improvement projects, to include the following activities. ***Defense Agencies Initiative.*** RMI is actively involved with the Defense Agencies Initiative (DAI), which is an ongoing DoD program with an objective to provide a JFMIP approved accounting and financial management system for all Defense Agencies. RMI attends all DAI implementation functions conducted by the Defense Finance Accounting Service (DFAS) and the Military Health System (MHS) to ensure that the University's interests and requirements are identified. ***Successful Conversion of the Monthly Trial Balance Data.*** RMI and FMG collaborated on the development of a CUFS program that automates the conversion of monthly trial balance data into the standard United States General Ledger format. This programming effort was a major factor in greatly improving the accuracy of the University's monthly external reporting, as well as, reducing the growth of the DFAS charges for accounting support, during 2004, by \$99,000. ***Upgrade of DoD's Standard Procurement System to Version 4.2.2.*** RMI facilitated a major software upgrade of DoD's Standard Procurement System (SPS) to Version 4.2.2. This upgrade corrected several system defects and is a pre-requisite to improving DD350 reporting capabilities and exploring potential SPS/CUFS interfaces. ***Facilitation of an Accelerated Reporting Schedule for DFAS.*** RMI devised and implemented a CUFS monthly *close* process to facilitate an accelerated monthly reporting schedule, as mandated by DFAS.

Grants Management Office. In its fifth year of operation, the Grants Management Office (GRT) awarded seven new grant agreements, worth more than \$6,200,000; and, GRT completed over 100 modification actions to existing awards. Currently, there are 146 active USU grant agreements, ranging from \$18,000 to \$54,000,000. The total award value of all awards is approximately \$403,861,000.

There are more than 75 principal investigators conducting work on research projects awarded to 12 external grant recipients. Most of the awards go to the Henry M. Jackson Foundation and the remaining go to other non-profit organizations. There are about 28 Agencies providing funding to support these awards. GRT processes more than 48 invoices per month; these invoices are paid at nine different pay stations, both at DoD and other Federal sites.

GRT also provides oversight for the TriService Nursing Research Program (TSNRP), a \$6,000,000 annual program with more than 70 grants. TSNRP is a congressionally-funded program, supported by a staff and an Executive Director, who also serves as a Deputy to the USU Grants Officer.

Other significant accomplishments, in 2004, include the following activities. ***Support to the Navy Medical Research Command.*** Under a USU/Navy Medical Research Command (NMRC) agreement, the NMRC provided funding to pay annual personnel costs for two (contracted) grant specialists to assist with managing NMRC-sponsored research projects. One specialist is assigned to the Office of Research Administration and another is assigned to GRT. There are currently 29 NMRC-sponsored grant agreements that total more than \$82,000,000. ***Met All Scheduled Award Dates for Congressionally Funded Projects.*** GRT successfully met all scheduled award dates for Fiscal Year 2004 Congressionally funded research projects. ***Two GRT Personnel Complete Training.*** During 2004, two grant specialists successfully completed the Grants Management Certificate Program. ***Renovation of Office Space.*** During the past year, the GRT office space was renovated to provide two additional workstation areas, as well as, additional storage space.

Contracting Directorate. During 2004, the USU Contracting Office continued to provide the University community with all required goods and services. The staff endeavored to provide the highest and most responsive level of service, while fully complying with all Federal acquisition regulations. The procurement approach employed consists of the contracting staff teaming with the requestors to accurately describe the government's requirement, providing appropriate notice (including the factors to be considered), evaluating all offers received, awarding to the firm that offers the best value, and administering the purchase to ensure that the University receives what it needs and ordered and that the contractor is paid in a timely manner.

In Fiscal Year 2004, the staff awarded nearly 700 reportable actions for a total of approximately \$25,000,000, despite staffing levels, that at times, dipped to fifty percent. The University exceeded its Fiscal Year 2004 goal for Small Businesses and Small Disadvantaged Business Utilization. ***Of the 15 organizations reporting as Other Defense Agencies, USU reported the highest percentage of dollars spent with Small Businesses, Small Disadvantaged Businesses, 8 (a) Businesses, and Women Owned Businesses.*** These results demonstrate a strong commitment to the Socio-Economic Initiatives approved by the United States Congress and codified in the Federal Acquisition Regulations.

The University's use of the Government Purchase Card reached \$10,760,000, in 2004. The University's Program consists of approximately 200 cardholders and 82 billing officials who made 18,357 purchases, during 2004. This procurement authority, decentralized throughout the University to individual cardholders within the departments, has revolutionized the acquisition of required items. The USU departments and activities routinely obtain next-day desktop delivery of office supplies, saving both time and money in the process, which allows the Contracting Office to focus on the *big-ticket* items. The Government Purchase Card Program is the responsibility of the Contracting entity within each organization. The USU Contracting Office serves as the Agency Program Coordinator and trains all of the cardholders and billing officials; establishes and maintains accounts for all cardholders and billing officials; publishes training materials and standard operating procedures; and, conducts annual reviews of the departmental accounts.

In May of 2004, **Mr. Anthony M. Revenis, J.D., was appointed as the Director of Contracting.** Mr. Revenis returned to USU, where he had served as the Director of Contracting, from 1986 to 1990. For the past 13 years, he had served as the Senior Contracting Officer in the Office of the Director at the National Institutes of Health (NIH), where he specialized in contracting for health communications and professional services. In 2002, he received the prestigious NIH Director's Award for his innovative and streamlined contracting methods. The hallmark of his NIH experience was an extremely high level of customer and contractor satisfaction; Mr. Revenis intends to transfer that success to the USU community.
